CRAY

1987
CUSTOMER SATISFACTION SURVEY
DATA BASE PRINTOUTS

May 7, 1987

Jack Keen, Project Manager

INPUT
1943 Landings Drive
Mountain View, CA 94303

(415) 960-3990

INPUT

ZCR3 W1

INPUT
V1-2

[illegible] UTILIZATION

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4       =      0.00000 THRU       40.0000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 10 Q1D

                        CUM                 CUM
       VALUE    FREQ   FREQ         %         %          Z SCORE
      1.00000      3      3      30.0      30.0         -1.44914
      2.00000      7     10      70.0     100.0         0.621059
       TOTAL      10     10     100.0     100.0
```

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```
COMMAND: DESC

CO
SELECTION ON VAR 21 Q4       =      0.00000 THRU       40.0000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

10 CASES ( 17.5%) ARE IN THIS SUBSET

10 CASES (100.0%) ARE VALID

                                                            STD ERROR      COEFF OF
VARIABLE                MEAN      STD.DEV.      VARIANCE      OF MEAN     VARIATION
 11 Q2A              8.50000       1.08012       1.16667     0.341565       12.7073
 12 Q2B              8.00000       1.88562       3.55556     0.596285       23.5702
 13 Q2C1             8.00000       1.05409       1.11111     0.333333       13.1762
 14 Q2C2             8.50000       1.26930       1.61111     0.401386       14.9329
 15 Q2C3             5.90000       2.13177       4.54444     0.674125       36.1317
 16 Q2C4             7.00000       1.56347       2.44444     0.494413       22.3353
 17 Q2D              7.60000       1.64655       2.71111     0.520683       21.6651
 18 Q2E              4.90000       3.10734       9.65556     0.982627       63.4151
 19 Q2F              6.40000       2.67499       7.15556     0.845905       41.7967
 20 Q2G              8.20000       1.61933       2.62222     0.512076       19.7479


  RIABLE             MINIMUM       MAXIMUM         RANGE        TOTAL
   1 Q2A             7.00000       10.0000       3.00000      85.0000
 12 Q2B              4.00000       10.0000       6.00000      80.0000
 13 Q2C1             6.00000       9.00000       3.00000      80.0000
 14 Q2C2             6.00000       10.0000       4.00000      85.0000
 15 Q2C3             2.00000       8.00000       6.00000      59.0000
 16 Q2C4             4.00000       9.00000       5.00000      70.0000
 17 Q2D              5.00000       10.0000       5.00000      76.0000
 18 Q2E              1.00000       10.0000       9.00000      49.0000
 19 Q2F              1.00000       10.0000       9.00000      64.0000
 20 Q2G              5.00000       10.0000       5.00000      82.0000
```

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4       =      0.00000 THRU       40.0000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 11 Q2A

                        CUM                CUM
       VALUE    FREQ   FREQ        %         %          Z SCORE
      7.00000      2      2     20.0      20.0         -1.38873
      8.00000      3      5     30.0      50.0        -0.462910
      9.00000      3      8     30.0      80.0         0.462910
      10.0000      2     10     20.0     100.0          1.38873
       TOTAL      10     10    100.0     100.0


VARIABLE: 12 Q2B

                        CUM                CUM
       VALUE    FREQ   FREQ        %         %          Z SCORE
      4.00000      1      1     10.0      10.0         -2.12132
      6.00000      1      2     10.0      20.0         -1.06066
      7.00000      1      3     10.0      30.0        -0.530330
      8.00000      2      5     20.0      50.0          0.00000
      9.00000      3      8     30.0      80.0         0.530330
      10.0000      2     10     20.0     100.0          1.06066
       TOTAL      10     10    100.0     100.0


VARIABLE: 13 Q2C1

                        CUM                CUM
       VALUE    FREQ   FREQ        %         %          Z SCORE
      6.00000      1      1     10.0      10.0         -1.89737
      7.00000      2      3     20.0      30.0        -0.948683
      8.00000      3      6     30.0      60.0     -2.76103E-11
      9.00000      4     10     40.0     100.0         0.948683
       TOTAL      10     10    100.0     100.0
```

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4       =      0.00000 THRU       40.0000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 14 Q2C2

                        CUM                CUM
      VALUE    FREQ    FREQ        %         %          Z SCORE
     6.00000      1       1     10.0      10.0         -1.96960
     7.00000      1       2     10.0      20.0         -1.18176
     8.00000      2       4     20.0      40.0        -0.393919
     9.00000      4       8     40.0      80.0         0.393919
     10.0000      2      10     20.0     100.0          1.18176
      TOTAL      10      10    100.0     100.0


VARIABLE: 15 Q2C3

                        CUM                CUM
      VALUE    FREQ    FREQ        %         %          Z SCORE
     2.00000      1       1     10.0      10.0         -1.82947
     3.00000      1       2     10.0      20.0         -1.36037
     5.00000      2       4     20.0      40.0        -0.422184
     6.00000      1       5     10.0      50.0        0.0469094
     7.00000      2       7     20.0      70.0         0.516003
     8.00000      3      10     30.0     100.0         0.985097
      TOTAL      10      10    100.0     100.0


VARIABLE: 16 Q2C4

                        CUM                CUM
      VALUE    FREQ    FREQ        %         %          Z SCORE
     4.00000      1       1     10.0      10.0         -1.91881
     5.00000      1       2     10.0      20.0         -1.27920
     6.00000      1       3     10.0      30.0        -0.639602
     7.00000      2       5     20.0      50.0     -9.30744E-12
     8.00000      4       9     40.0      90.0         0.639602
     9.00000      1      10     10.0     100.0          1.27920
      TOTAL      10      10    100.0     100.0
```

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4       =      0.00000 THRU       40.0000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 17 Q2D

                       CUM                CUM
       VALUE    FREQ  FREQ        %         %          Z SCORE
      5.00000      2     2     20.0      20.0         -1.57906
      7.00000      2     4     20.0      40.0        -0.364399
      8.00000      3     7     30.0      70.0         0.242933
      9.00000      2     9     20.0      90.0         0.850265
      10.0000      1    10     10.0     100.0          1.45760
       TOTAL      10    10    100.0     100.0


VARIABLE: 18 Q2E

                       CUM                CUM
       VALUE    FREQ  FREQ        %         %          Z SCORE
      1.00000      1     1     10.0      10.0         -1.25509
      2.00000      1     2     10.0      20.0        -0.933274
      3.00000      3     5     30.0      50.0        -0.611456
      4.00000      1     6     10.0      60.0        -0.289637
      7.00000      2     8     20.0      80.0         0.675819
      9.00000      1     9     10.0      90.0          1.31946
      10.0000      1    10     10.0     100.0          1.64128
       TOTAL      10    10    100.0     100.0
```

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4       =      0.00000 THRU       40.0000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 19 Q2F

                        CUM              CUM
      VALUE    FREQ    FREQ      %        %          Z SCORE
     1.00000      1       1    10.0     10.0        -2.01870
     5.00000      3       4    30.0     40.0       -0.523367
     6.00000      2       6    20.0     60.0       -0.149533
     8.00000      1       7    10.0     70.0        0.598134
     9.00000      2       9    20.0     90.0        0.971967
     10.0000      1      10    10.0    100.0         1.34580
      TOTAL      10      10   100.0    100.0


VARIABLE: 20 Q2G

                        CUM              CUM
      VALUE    FREQ    FREQ      %        %          Z SCORE
     5.00000      1       1    10.0     10.0        -1.97613
     6.00000      1       2    10.0     20.0        -1.35859
     8.00000      3       5    30.0     50.0       -0.123508
     9.00000      3       8    30.0     80.0        0.494032
     10.0000      2      10    20.0    100.0         1.11157
      TOTAL      10      10   100.0    100.0
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4       =      0.00000 THRU       40.0000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

10 CASES ( 17.5%) ARE IN THIS SUBSET

                   VALID        NUMBER
VARIABLE           CASES       MISSING     % MISSING
 21 Q4                10             0           0.0
 22 Q5                 9             1          10.0
 23 Q5A                7             3          30.0
 24 Q5B                8             2          20.0
 25 Q5C                3             7          70.0

                                                         STD ERROR      COEFF OF
VARIABLE            MEAN      STD.DEV.      VARIANCE       OF MEAN     VARIATION
 21 Q4           31.5000       14.1520       200.278       4.47524       44.9268
 22 Q5           6.33333       8.45577       71.5000       2.81859       133.512
 23 Q5A          50.2857       36.6593       1343.90       13.8559       72.9020
 24 Q5B          64.1250       33.8966       1148.98       11.9843       52.8603
 25 Q5C          45.0000       48.2183       2325.00       27.8388       107.152


 ARIABLE         MINIMUM       MAXIMUM         RANGE         TOTAL
 21 Q4           5.00000       40.0000       35.0000       315.000
 22 Q5           1.00000       28.0000       27.0000       57.0000
 23 Q5A          10.0000       100.000       90.0000       352.000
 24 Q5B          5.00000       100.000       95.0000       513.000
 25 Q5C          10.0000       100.000       90.0000       135.000
```

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4       =      0.00000 THRU       40.0000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 23 Q5A

                       CUM                 CUM
      VALUE    FREQ   FREQ        %         %           Z SCORE
     10.0000      1      1     14.3      14.3          -1.09892
     25.0000      2      3     28.6      42.9         -0.689749
     30.0000      1      4     14.3      57.1         -0.553358
     67.0000      1      5     14.3      71.4          0.455936
     95.0000      1      6     14.3      85.7           1.21973
     100.000      1      7     14.3     100.0           1.35612
      TOTAL       7      7    100.0     100.0

VARIABLE: 24 Q5B

                       CUM                 CUM
      VALUE    FREQ   FREQ        %         %           Z SCORE
     5.00000      1      1     12.5      12.5          -1.74427
     33.0000      1      2     12.5      25.0         -0.918233
     50.0000      1      3     12.5      37.5         -0.416708
     60.0000      1      4     12.5      50.0         -0.121693
     75.0000      1      5     12.5      62.5          0.320828
     90.0000      1      6     12.5      75.0          0.763350
     100.000      2      8     25.0     100.0           1.05836
      TOTAL       8      8    100.0     100.0

VARIABLE: 25 Q5C

                       CUM                 CUM
      VALUE    FREQ   FREQ        %         %           Z SCORE
     10.0000      1      1     33.3      33.3         -0.725866
     25.0000      1      2     33.3      66.7         -0.414781
     100.000      1      3     33.3     100.0           1.14065
      TOTAL       3      3    100.0     100.0
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4       =      0.00000 THRU       40.0000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

10 CASES ( 17.5%) ARE IN THIS SUBSET

                           VALID       NUMBER
VARIABLE                   CASES      MISSING    % MISSING
 26 Q6A                        9            1         10.0
 27 Q6B                        8            2         20.0
 28 Q7                         5            5         50.0

                                                             STD ERROR     COEFF OF
VARIABLE                    MEAN     STD.DEV.     VARIANCE     OF MEAN    VARIATION
 26 Q6A                  20.6667      23.9322      572.750     7.97740      115.801
 27 Q6B                  56.8750      32.6165      1063.84     11.5317      57.3478
 28 Q7                   67.8000      27.4627      754.200     12.2817      40.5055


VARIABLE                 MINIMUM      MAXIMUM        RANGE       TOTAL
 26 Q6A                  1.00000      60.0000      59.0000     186.000
 27 Q6B                  5.00000      120.000      115.000     455.000
 28 Q7                   30.0000      99.0000      69.0000     339.000
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4      =      0.00000 THRU        40.0000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

10 CASES ( 17.5%) ARE IN THIS SUBSET

                    VALID       NUMBER
VARIABLE            CASES      MISSING    % MISSING
 29 Q8A                10            0          0.0
 30 Q8B                10            0          0.0
 31 Q8C                 9            1         10.0
 32 Q8D                 9            1         10.0
 33 Q9                  2            8         80.0

                                                       STD ERROR     COEFF OF
VARIABLE             MEAN     STD.DEV.     VARIANCE      OF MEAN    VARIATION
 29 Q8A           8.70000      1.49443      2.23333     0.472582      17.1774
 30 Q8B           7.90000      1.37032      1.87778     0.433333      17.3458
 31 Q8C           9.22222     0.833333     0.694444     0.277778      9.03614
 32 Q8D           9.22222     0.833333     0.694444     0.277778      9.03614
 33 Q9            7.50000      2.12132      4.50000      1.50000      28.2843

  RIABLE          MINIMUM      MAXIMUM        RANGE        TOTAL
 29 Q8A           5.00000      10.0000      5.00000      87.0000
 30 Q8B           6.00000      10.0000      4.00000      79.0000
 31 Q8C           8.00000      10.0000      2.00000      83.0000
 32 Q8D           8.00000      10.0000      2.00000      83.0000
 33 Q9            6.00000      9.00000      3.00000      15.0000
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4       =      0.00000 THRU       40.0000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

10 CASES ( 17.5%) ARE IN THIS SUBSET

                     VALID       NUMBER
VARIABLE             CASES      MISSING    % MISSING
 34 Q10A                 9            1         10.0
 35 Q10B                 4            6         60.0
 36 Q10C                 7            3         30.0
 37 Q10D                 8            2         20.0
 38 Q10E                10            0          0.0
 39 Q10F                 7            3         30.0

                                                         STD ERROR      COEFF OF
VARIABLE              MEAN     STD.DEV.     VARIANCE      OF MEAN      VARIATION
 34 Q10A           9.55556     0.726483     0.527778     0.242161        7.60273
 35 Q10B           7.75000      1.70783      2.91667     0.853913        22.0365
 36 Q10C           8.71429      1.11270      1.23810     0.420560        12.7687
 37 Q10D           8.50000      1.06904      1.14286     0.377964        12.5770
 38 Q10E           9.20000     0.788811     0.622222     0.249444        8.57403
 39 Q10F           8.57143     0.786796     0.619048     0.297381        9.17928


VARIABLE           MINIMUM      MAXIMUM        RANGE        TOTAL
 34 Q10A           8.00000      10.0000      2.00000      86.0000
 35 Q10B           6.00000      10.0000      4.00000      31.0000
 36 Q10C           7.00000      10.0000      3.00000      61.0000
 37 Q10D           7.00000      10.0000      3.00000      68.0000
 38 Q10E           8.00000      10.0000      2.00000      92.0000
 39 Q10F           8.00000      10.0000      2.00000      60.0000
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4      =      0.00000 THRU       40.0000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

10 CASES ( 17.5%) ARE IN THIS SUBSET

                         VALID        NUMBER
VARIABLE                 CASES       MISSING    % MISSING
 40 Q12A1                    2             8         80.0
 41 Q12A2                    1             9         90.0
 42 Q12A3                    1             9         90.0
 43 Q12A4                    2             8         80.0
 44 Q12B1                    2             8         80.0
 45 Q12B2                    3             7         70.0
 46 Q12B3                    1             9         90.0
 47 Q12B4                    2             8         80.0

                                                          STD ERROR     COEFF OF
VARIABLE                  MEAN      STD.DEV.    VARIANCE    OF MEAN    VARIATION
 40 Q12A1              1.00000       0.00000     0.00000    0.00000      0.00000
 41 Q12A2              1.00000       0.00000     0.00000    0.00000      0.00000
 42 Q12A3              30.0000       0.00000     0.00000    0.00000      0.00000
 43 Q12A4              4.00000       4.24264     18.0000    3.00000      106.066
 44 Q12B1              14.0000       9.89949     98.0000    7.00000      70.7107
 45 Q12B2              49.3333       61.5982     3794.33    35.5637      124.861
 46 Q12B3              90.0000       0.00000     0.00000    0.00000      0.00000
 47 Q12B4              14.0000       9.89949     98.0000    7.00000      70.7107


VARIABLE               MINIMUM       MAXIMUM       RANGE      TOTAL
 40 Q12A1              1.00000       1.00000     0.00000    2.00000
 41 Q12A2              1.00000       1.00000     0.00000    1.00000
 42 Q12A3              30.0000       30.0000     0.00000    30.0000
 43 Q12A4              1.00000       7.00000     6.00000    8.00000
 44 Q12B1              7.00000       21.0000     14.0000    28.0000
 45 Q12B2              7.00000       120.000     113.000    148.000
 46 Q12B3              90.0000       90.0000     0.00000    90.0000
 47 Q12B4              7.00000       21.0000     14.0000    28.0000
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4      =      0.00000 THRU        40.0000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

10 CASES ( 17.5%) ARE IN THIS SUBSET

                    VALID       NUMBER
VARIABLE            CASES      MISSING     % MISSING
 48 Q13A1               3            7          70.0
 49 Q13A2               3            7          70.0
 50 Q13A3               1            9          90.0
 51 Q13A4               2            8          80.0
 52 Q13B1               5            5          50.0
 53 Q13B2               6            4          40.0
 54 Q13B3               1            9          90.0
 55 Q13B4               4            6          60.0

                                                        STD ERROR     COEFF OF
VARIABLE             MEAN     STD.DEV.      VARIANCE      OF MEAN    VARIATION
 48 Q13A1         4.00000      3.00000       9.00000      1.73205      75.0000
 49 Q13A2         23.6667      31.5013       992.333      18.1873      133.104
 50 Q13A3         30.0000      0.00000       0.00000      0.00000      0.00000
 51 Q13A4         10.5000      4.94975       24.5000      3.50000      47.1405
 52 Q13B1         43.6000      43.7184       1911.30      19.5515      100.272
 53 Q13B2         102.000      134.648       18130.0      54.9697      132.008
 54 Q13B3         90.0000      0.00000       0.00000      0.00000      0.00000
 55 Q13B4         39.5000      42.8525       1836.33      21.4262      108.487


VARIABLE          MINIMUM      MAXIMUM         RANGE        TOTAL
 48 Q13A1         1.00000      7.00000       6.00000      12.0000
 49 Q13A2         4.00000      60.0000       56.0000      71.0000
 50 Q13A3         30.0000      30.0000       0.00000      30.0000
 51 Q13A4         7.00000      14.0000       7.00000      21.0000
 52 Q13B1         1.00000      90.0000       89.0000      218.000
 53 Q13B2         7.00000      365.000       358.000      612.000
 54 Q13B3         90.0000      90.0000       0.00000      90.0000
 55 Q13B4         1.00000      90.0000       89.0000      158.000
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4      =      0.00000 THRU       40.0000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

10 CASES ( 17.5%) ARE IN THIS SUBSET

                     VALID        NUMBER
VARIABLE             CASES       MISSING     % MISSING
 56 Q14A1               10             0           0.0
 57 Q14A2                9             1          10.0
 58 Q14A3                3             7          70.0
 59 Q14A4                5             5          50.0
 60 Q14B1                9             1          10.0
 61 Q14B2                8             2          20.0
 62 Q14B3                3             7          70.0
 63 Q14B4                5             5          50.0
 64 Q14C1                9             1          10.0
 65 Q14C2                9             1          10.0
 66 Q14C3                3             7          70.0
 67 Q14C4                5             5          50.0

                                                          STD ERROR      COEFF OF
VARIABLE              MEAN      STD.DEV.      VARIANCE       OF MEAN     VARIATION
 56 Q14A1          7.70000       1.94651       3.78889      0.615540       25.2793
 57 Q14A2          7.22222       2.22361       4.94444      0.741204       30.7885
 58 Q14A3          5.00000       4.35890       19.0000       2.51661       87.1780
 59 Q14A4          8.40000       1.14018       1.30000      0.509902       13.5735
 60 Q14B1          7.00000       2.39792       5.75000      0.799305       34.2559
 61 Q14B2          7.00000       2.82843       8.00000       1.00000       40.4061
 62 Q14B3          5.00000       4.35890       19.0000       2.51661       87.1780
 63 Q14B4          8.20000       1.09545       1.20000      0.489898       13.3591
 64 Q14C1          7.11111       2.26078       5.11111      0.753592       31.7922
 65 Q14C2          6.33333       3.08221       9.50000       1.02740       48.6664
 66 Q14C3          5.00000       4.35890       19.0000       2.51661       87.1780
 67 Q14C4          8.20000       1.09545       1.20000      0.489898       13.3591


VARIABLE           MINIMUM       MAXIMUM         RANGE         TOTAL
 56 Q14A1          3.00000       9.00000       6.00000       77.0000
 57 Q14A2          3.00000       10.0000       7.00000       65.0000
 58 Q14A3          2.00000       10.0000       8.00000       15.0000
 59 Q14A4          7.00000       10.0000       3.00000       42.0000
 60 Q14B1          3.00000       9.00000       6.00000       63.0000
 61 Q14B2          1.00000       10.0000       9.00000       56.0000
 62 Q14B3          2.00000       10.0000       8.00000       15.0000
 63 Q14B4          7.00000       10.0000       3.00000       41.0000
 64 Q14C1          3.00000       9.00000       6.00000       64.0000
 65 Q14C2          1.00000       10.0000       9.00000       57.0000
 66 Q14C3          2.00000       10.0000       8.00000       15.0000
 67 Q14C4          7.00000       10.0000       3.00000       41.0000
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```
COMMAND: DESC


SELECTION ON VAR 21 Q4      =      0.00000 THRU       40.0000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

10 CASES ( 17.5%) ARE IN THIS SUBSET

                   VALID       NUMBER
VARIABLE           CASES       MISSING    % MISSING
 68 Q15A1              6             4         40.0
 69 Q15A2              4             6         60.0
 70 Q15A3              1             9         90.0
 71 Q15A4              2             8         80.0
 72 Q15B1              8             2         20.0
 73 Q15B2              8             2         20.0
 74 Q15B3              2             8         80.0
 75 Q15B4              4             6         60.0
 76 Q15C1              7             3         30.0
 77 Q15C2              7             3         30.0
 78 Q15C3              4             6         60.0
 79 Q15C4              5             5         50.0
 80 Q15D1              9             1         10.0
 81 Q15D2              7             3         30.0
 82 Q15D3              2             8         80.0
  3 Q15D4              4             6         60.0
 84 Q15E1              7             3         30.0
 85 Q15E2              6             4         40.0
 86 Q15E3              2             8         80.0
 87 Q15E4              5             5         50.0

                                                           STD ERROR      COEFF OF
VARIABLE            MEAN       STD.DEV.      VARIANCE       OF MEAN      VARIATION
 68 Q15A1         8.16667       1.32916       1.76667      0.542627        16.2754
 69 Q15A2         8.25000       1.70783       2.91667      0.853913        20.7009
 70 Q15A3         8.00000       0.00000       0.00000       0.00000        0.00000
 71 Q15A4         8.00000       0.00000       0.00000       0.00000        0.00000
 72 Q15B1         7.50000       1.51186       2.28571      0.534522        20.1581
 73 Q15B2         8.12500       1.24642       1.55357      0.440677        15.3406
 74 Q15B3         8.00000       1.41421       2.00000       1.00000        17.6777
 75 Q15B4         7.75000       2.06155       4.25000       1.03078        26.6007
 76 Q15C1         7.28571       2.36039       5.57143      0.892143        32.3975
 77 Q15C2         6.00000       3.41565       11.6667       1.29099        56.9275
 78 Q15C3         5.50000       4.04145       16.3333       2.02073        73.4809
 79 Q15C4         8.20000      0.836660      0.700000      0.374166        10.2032
 80 Q15D1         8.55556       1.01379       1.02778      0.337931        11.8495
 81 Q15D2         7.71429       1.60357       2.57143      0.606092        20.7870
 82 Q15D3         8.50000       2.12132       4.50000       1.50000        24.9567
 83 Q15D4         8.00000       1.41421       2.00000      0.707107        17.6777
 84 Q15E1         8.28571       1.11270       1.23810      0.420560        13.4291
  5 Q15E2         7.16667       3.18852       10.1667       1.30171        44.4910
  6 Q15E3         8.50000       2.12132       4.50000       1.50000        24.9567
 87 Q15E4         8.60000       1.34164       1.80000      0.600000        15.6005
```

```
COMMAND: DESC

  RIABLE             MINIMUM       MAXIMUM        RANGE         TOTAL
 68 Q15A1           6.00000       10.0000       4.00000       49.0000
 69 Q15A2           6.00000       10.0000       4.00000       33.0000
 70 Q15A3           8.00000       8.00000       0.00000       8.00000
 71 Q15A4           8.00000       8.00000       0.00000       16.0000
 72 Q15B1           6.00000       10.0000       4.00000       60.0000
 73 Q15B2           6.00000       10.0000       4.00000       65.0000
 74 Q15B3           7.00000       9.00000       2.00000       16.0000
 75 Q15B4           6.00000       10.0000       4.00000       31.0000
 76 Q15C1           3.00000       10.0000       7.00000       51.0000
 77 Q15C2           1.00000       9.00000       8.00000       42.0000
 78 Q15C3           2.00000       9.00000       7.00000       22.0000
 79 Q15C4           7.00000       9.00000       2.00000       41.0000
 80 Q15D1           7.00000       10.0000       3.00000       77.0000
 81 Q15D2           5.00000       10.0000       5.00000       54.0000
 82 Q15D3           7.00000       10.0000       3.00000       17.0000
 83 Q15D4           7.00000       10.0000       3.00000       32.0000
 84 Q15E1           7.00000       10.0000       3.00000       58.0000
 85 Q15E2           1.00000       10.0000       9.00000       43.0000
 86 Q15E3           7.00000       10.0000       3.00000       17.0000
 87 Q15E4           7.00000       10.0000       3.00000       43.0000
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4      =      0.00000 THRU       40.0000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

10 CASES ( 17.5%) ARE IN THIS SUBSET

10 CASES (100.0%) ARE VALID

                                                        STD ERROR     COEFF OF
VARIABLE                MEAN      STD.DEV.     VARIANCE    OF MEAN    VARIATION
 88 Q16              7.80000      2.14994      4.62222    0.679869      27.5633


VARIABLE             MINIMUM      MAXIMUM        RANGE       TOTAL
 88 Q16              3.00000      10.0000      7.00000     78.0000
```

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4       =      0.00000 THRU       40.0000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 89 Q17

                          CUM                CUM
       VALUE    FREQ   FREQ         %          %           Z SCORE
      1.00000      3      3      50.0       50.0         -0.847579
      2.00000      1      4      16.7       66.7          0.169516
      3.00000      2      6      33.3      100.0           1.18661
       TOTAL       6      6     100.0      100.0


VARIABLE: 90 Q18A

                          CUM                CUM
       VALUE    FREQ   FREQ         %          %           Z SCORE
      1.00000      3      3      30.0       30.0          -1.44914
      2.00000      7     10      70.0      100.0          0.621059
       TOTAL      10     10     100.0      100.0


VARIABLE: 91 Q18B

                          CUM                CUM
       VALUE    FREQ   FREQ         %          %           Z SCORE
      1.00000      1      1      50.0       50.0         -0.707107
      2.00000      1      2      50.0      100.0          0.707107
       TOTAL       2      2     100.0      100.0
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4       =       0.00000 THRU        40.0000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

10 CASES ( 17.5%) ARE IN THIS SUBSET

                       VALID         NUMBER
VARIABLE               CASES        MISSING      % MISSING
 92 Q20A                  10              0            0.0
 93 Q20B                   7              3           30.0
 94 Q20C                  10              0            0.0

                                                              STD ERROR        COEFF OF
VARIABLE                MEAN       STD.DEV.       VARIANCE      OF MEAN       VARIATION
 92 Q20A             7.60000        2.01108        4.04444     0.635959         26.4616
 93 Q20B             8.00000        1.41421        2.00000     0.534522         17.6777
 94 Q20C             8.70000        1.15950        1.34444     0.366667         13.3276


VARIABLE             MINIMUM        MAXIMUM          RANGE        TOTAL
 92 Q20A             4.00000        9.00000        5.00000      76.0000
 93 Q20B             5.00000        9.00000        4.00000      56.0000
 94 Q20C             7.00000        10.0000        3.00000      87.0000
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4      =      0.00000 THRU       40.0000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

10 CASES ( 17.5%) ARE IN THIS SUBSET

                      VALID       NUMBER
VARIABLE              CASES      MISSING    % MISSING
 95 Q20D1                 7            3         30.0
 96 Q20D2                10            0          0.0
 97 Q20D3                 8            2         20.0

                                                          STD ERROR      COEFF OF
VARIABLE               MEAN     STD.DEV.     VARIANCE      OF MEAN     VARIATION
 95 Q20D1         0.0657143    0.0820279   0.00672857    0.0310036       124.825
 96 Q20D2          0.753000     0.565863     0.320201     0.178942       75.1478
 97 Q20D3           5.87500      4.35685      18.9821      1.54038       74.1592


VARIABLE            MINIMUM      MAXIMUM        RANGE        TOTAL
 95 Q20D1         0.0300000     0.250000     0.220000     0.460000
 96 Q20D2          0.130000      2.00000      1.87000      7.53000
 97 Q20D3           2.00000      12.0000      10.0000      47.0000
```

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4       =       0.00000 THRU       40.0000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 98 Q20E

                        CUM               CUM
      VALUE    FREQ   FREQ       %         %           Z SCORE
     1.00000     10     10   100.0     100.0           0.00000
      TOTAL      10     10   100.0     100.0


VARIABLE: 99 Q20F

                        CUM               CUM
      VALUE    FREQ   FREQ       %         %           Z SCORE
     1.00000      7      7    70.0      70.0         -0.621059
     2.00000      3     10    30.0     100.0           1.44914
      TOTAL      10     10   100.0     100.0


VARIABLE: 100 Q21A

                        CUM               CUM
      VALUE    FREQ   FREQ       %         %           Z SCORE
     1.00000      6      6    60.0      60.0         -0.774597
     2.00000      4     10    40.0     100.0           1.16190
      TOTAL      10     10   100.0     100.0
```

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4       =       0.00000 THRU       40.0000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 101 Q22A

                         CUM                  CUM
       VALUE    FREQ    FREQ         %          %          Z SCORE
     1.00000       5       5      62.5       62.5        -0.724569
     2.00000       3       8      37.5      100.0          1.20761
       TOTAL       8       8     100.0      100.0


VARIABLE: 102 Q22B

                         CUM                  CUM
       VALUE    FREQ    FREQ         %          %          Z SCORE
     1.00000       5       5      62.5       62.5        -0.724569
     2.00000       3       8      37.5      100.0          1.20761
       TOTAL       8       8     100.0      100.0


VARIABLE: 103 Q24A

                         CUM                  CUM
       VALUE    FREQ    FREQ         %          %          Z SCORE
     1.00000       4       4      44.4       44.4         -1.05409
     2.00000       5       9      55.6      100.0         0.843274
       TOTAL       9       9     100.0      100.0
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4      =      0.00000 THRU       40.0000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

10 CASES ( 17.5%) ARE IN THIS SUBSET

7 CASES ( 70.0%) ARE VALID

                                                        STD ERROR     COEFF OF
VARIABLE                 MEAN      STD.DEV.     VARIANCE   OF MEAN     VARIATION
104 Q24B              7.42857      1.81265      3.28571   0.685119       24.4011


VARIABLE              MINIMUM      MAXIMUM        RANGE      TOTAL
104 Q24B              5.00000      9.00000      4.00000    52.0000
```

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4       =      0.00000 THRU       40.0000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 105 Q26A

                          CUM               CUM
      VALUE    FREQ   FREQ        %          %           Z SCORE
     1.00000      8      8     80.0       80.0         -0.474342
     3.00000      2     10     20.0      100.0           1.89737
      TOTAL      10     10    100.0      100.0
```

41-89% UTILIZATION

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4       =      41.0000 THRU       89.0000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 10 Q1D

                         CUM                CUM
       VALUE    FREQ    FREQ       %          %          Z SCORE
      1.00000     13      13     54.2      54.2        -0.900498
      2.00000     11      24     45.8     100.0          1.06423
       TOTAL      24      24    100.0     100.0
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4       =      41.0000 THRU       89.0000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

24 CASES ( 42.1%) ARE IN THIS SUBSET

24 CASES (100.0%) ARE VALID

                                                         STD ERROR      COEFF OF
VARIABLE              MEAN      STD.DEV.      VARIANCE     OF MEAN     VARIATION
 11 Q2A            9.04167      0.999094      0.998188    0.203939       11.0499
 12 Q2B            8.16667       1.68540       2.84058    0.344031       20.6376
 13 Q2C1           7.91667       1.58572       2.51449    0.323683       20.0301
 14 Q2C2           8.08333       1.52990       2.34058    0.312289       18.9265
 15 Q2C3           6.45833       1.97768       3.91123    0.403693       30.6222
 16 Q2C4           7.00000       2.10589       4.43478    0.429863       30.0842
 17 Q2D            7.70833       1.42887       2.04167    0.291667       18.5367
 18 Q2E            7.41667       2.08341       4.34058    0.425273       28.0909
 19 Q2F            7.75000       1.53934       2.36957    0.314216       19.8624
 20 Q2G            7.91667       2.01983       4.07971    0.412296       25.5136


VARIABLE           MINIMUM       MAXIMUM         RANGE       TOTAL
  1 Q2A            7.00000       10.0000       3.00000     217.000
 12 Q2B            4.00000       10.0000       6.00000     196.000
 13 Q2C1           5.00000       10.0000       5.00000     190.000
 14 Q2C2           5.00000       10.0000       5.00000     194.000
 15 Q2C3           2.00000       10.0000       8.00000     155.000
 16 Q2C4           2.00000       10.0000       8.00000     168.000
 17 Q2D            5.00000       10.0000       5.00000     185.000
 18 Q2E            3.00000       10.0000       7.00000     178.000
 19 Q2F            4.00000       10.0000       6.00000     186.000
 20 Q2G            2.00000       10.0000       8.00000     190.000
```

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4       =      41.0000 THRU       89.0000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 11 Q2A

                            CUM                 CUM
        VALUE    FREQ   FREQ         %          %           Z SCORE
       7.00000      2      2       8.3        8.3        -2.04352
       8.00000      5      7      20.8       29.2        -1.04261
       9.00000      7     14      29.2       58.3      -0.0417045
       10.0000     10     24      41.7      100.0        0.959203
        TOTAL      24     24     100.0      100.0


VARIABLE: 12 Q2B

                            CUM                 CUM
        VALUE    FREQ   FREQ         %          %           Z SCORE
       4.00000      1      1       4.2        4.2        -2.47221
       5.00000      2      3       8.3       12.5        -1.87888
       7.00000      4      7      16.7       29.2       -0.692219
       8.00000      4     11      16.7       45.8      -0.0988884
       9.00000      8     19      33.3       79.2        0.494442
       10.0000      5     24      20.8      100.0         1.08777
        TOTAL      24     24     100.0      100.0


VARIABLE: 13 Q2C1

                            CUM                 CUM
        VALUE    FREQ   FREQ         %          %           Z SCORE
       5.00000      2      2       8.3        8.3        -1.83934
       6.00000      3      5      12.5       20.8        -1.20871
       7.00000      4      9      16.7       37.5       -0.578078
       8.00000      6     15      25.0       62.5       0.0525525
       9.00000      4     19      16.7       79.2        0.683183
       10.0000      5     24      20.8      100.0         1.31381
        TOTAL      24     24     100.0      100.0
```

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4      =      41.0000 THRU       89.0000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 14 Q2C2

                       CUM              CUM
      VALUE    FREQ   FREQ       %        %          Z SCORE
     5.00000      2      2     8.3      8.3         -2.01539
     6.00000      2      4     8.3     16.7         -1.36175
     7.00000      3      7    12.5     29.2        -0.708109
     8.00000      7     14    29.2     58.3       -0.0544700
     9.00000      5     19    20.8     79.2         0.599170
     10.0000      5     24    20.8    100.0          1.25281
      TOTAL      24     24   100.0    100.0


VARIABLE: 15 Q2C3

                       CUM              CUM
      VALUE    FREQ   FREQ       %        %          Z SCORE
     2.00000      2      2     8.3      8.3         -2.25432
     3.00000      1      3     4.2     12.5         -1.74868
     5.00000      2      5     8.3     20.8        -0.737395
     6.00000      5     10    20.8     41.7        -0.231753
     7.00000      7     17    29.2     70.8         0.273889
     8.00000      5     22    20.8     91.7         0.779532
     9.00000      1     23     4.2     95.8          1.28517
     10.0000      1     24     4.2    100.0          1.79082
      TOTAL      24     24   100.0    100.0


VARIABLE: 16 Q2C4

                       CUM              CUM
      VALUE    FREQ   FREQ       %        %          Z SCORE
     2.00000      1      1     4.2      4.2         -2.37429
     3.00000      2      3     8.3     12.5         -1.89943
     5.00000      2      5     8.3     20.8        -0.949716
     6.00000      1      6     4.2     25.0        -0.474858
     7.00000      7     13    29.2     54.2          0.00000
     8.00000      6     19    25.0     79.2         0.474858
     9.00000      3     22    12.5     91.7         0.949716
     10.0000      2     24     8.3    100.0          1.42457
      TOTAL      24     24   100.0    100.0
```

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4       =      41.0000 THRU       89.0000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 17 Q2D

                         CUM                CUM
       VALUE    FREQ    FREQ        %        %           Z SCORE
      5.00000      2       2      8.3      8.3          -1.89544
      6.00000      1       3      4.2     12.5          -1.19558
      7.00000      9      12     37.5     50.0         -0.495730
      8.00000      6      18     25.0     75.0          0.204124
      9.00000      2      20      8.3     83.3          0.903978
      10.0000      4      24     16.7    100.0           1.60383
       TOTAL      24      24    100.0    100.0

VARIABLE: 18 Q2E

                         CUM                CUM
       VALUE    FREQ    FREQ        %        %           Z SCORE
      3.00000      2       2      8.3      8.3          -2.11993
      4.00000      1       3      4.2     12.5          -1.63994
      6.00000      4       7     16.7     29.2         -0.679976
      7.00000      4      11     16.7     45.8         -0.199993
      8.00000      6      17     25.0     70.8          0.279990
      9.00000      2      19      8.3     79.2          0.759974
      10.0000      5      24     20.8    100.0           1.23996
       TOTAL      24      24    100.0    100.0
```

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4       =      41.0000 THRU       89.0000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 19 Q2F

                        CUM                CUM
       VALUE    FREQ   FREQ       %         %          Z SCORE
      4.00000      1      1      4.2       4.2        -2.43611
      5.00000      1      2      4.2       8.3        -1.78648
      6.00000      3      5     12.5      20.8        -1.13685
      7.00000      3      8     12.5      33.3       -0.487222
      8.00000      9     17     37.5      70.8        0.162407
      9.00000      4     21     16.7      87.5        0.812037
      10.0000      3     24     12.5     100.0         1.46167
       TOTAL      24     24    100.0     100.0


VARIABLE: 20 Q2G

                        CUM                CUM
       VALUE    FREQ   FREQ       %         %          Z SCORE
      2.00000      1      1      4.2       4.2        -2.92929
      5.00000      2      3      8.3      12.5        -1.44402
      6.00000      2      5      8.3      20.8       -0.948925
      7.00000      3      8     12.5      33.3       -0.453834
      8.00000      5     13     20.8      54.2       0.0412576
      9.00000      5     18     20.8      75.0        0.536349
      10.0000      6     24     25.0     100.0         1.03144
       TOTAL      24     24    100.0     100.0
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4       =      41.0000 THRU       89.0000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

24 CASES ( 42.1%) ARE IN THIS SUBSET

                     VALID        NUMBER
VARIABLE             CASES       MISSING      % MISSING
 21 Q4                  24             0            0.0
 22 Q5                  22             2            8.3
 23 Q5A                 23             1            4.2
 24 Q5B                 21             3           12.5
 25 Q5C                 11            13           54.2

                                                            STD ERROR     COEFF OF
VARIABLE              MEAN      STD.DEV.       VARIANCE       OF MEAN    VARIATION
 21 Q4             65.4167       12.8433        164.949       2.62162      19.6330
 22 Q5             6.86364       5.92248        35.0758       1.26268      86.2878
 23 Q5A            48.6522       24.2798        589.510       5.06269      49.9049
 24 Q5B            42.4286       22.0036        484.157       4.80157      51.8603
 25 Q5C            26.3636       19.8810        395.255       5.99435      75.4107

VARIABLE           MINIMUM       MAXIMUM          RANGE         TOTAL
 21 Q4             45.0000       85.0000        40.0000       1570.00
 22 Q5             1.00000       20.0000        19.0000       151.000
 23 Q5A            10.0000       100.000        90.0000       1119.00
 24 Q5B            6.00000       90.0000        84.0000       891.000
 25 Q5C            5.00000       75.0000        70.0000       290.000
```

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4        =      41.0000 THRU       89.0000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 23 Q5A

                        CUM                  CUM
       VALUE    FREQ   FREQ        %          %          Z SCORE
      10.0000      1      1      4.3        4.3         -1.59195
      20.0000      3      4     13.0       17.4         -1.18008
      25.0000      4      8     17.4       34.8        -0.974149
      33.0000      1      9      4.3       39.1        -0.644658
      47.0000      1     10      4.3       43.5       -0.0680472
      50.0000      3     13     13.0       56.5        0.0555122
      60.0000      1     14      4.3       60.9         0.467377
      63.0000      1     15      4.3       65.2         0.590936
      66.0000      1     16      4.3       69.6         0.714496
      67.0000      1     17      4.3       73.9         0.755682
      68.0000      1     18      4.3       78.3         0.796868
      70.0000      1     19      4.3       82.6         0.879241
      75.0000      3     22     13.0       95.7          1.08517
      100.000      1     23      4.3      100.0          2.11484
       TOTAL      23     23    100.0      100.0


VARIABLE: 24 Q5B

                        CUM                  CUM
       VALUE    FREQ   FREQ        %          %          Z SCORE
      6.00000      1      1      4.8        4.8         -1.65558
      17.0000      1      2      4.8        9.5         -1.15566
      18.0000      1      3      4.8       14.3         -1.11021
      20.0000      1      4      4.8       19.0         -1.01932
      25.0000      1      5      4.8       23.8        -0.792079
      30.0000      1      6      4.8       28.6        -0.564843
      33.0000      2      8      9.5       38.1        -0.428502
      34.0000      1      9      4.8       42.9        -0.383055
      36.0000      1     10      4.8       47.6        -0.292160
      37.0000      1     11      4.8       52.4        -0.246713
      40.0000      2     13      9.5       61.9        -0.110372
      50.0000      3     16     14.3       76.2         0.344100
      60.0000      1     17      4.8       81.0         0.798572
      67.0000      1     18      4.8       85.7          1.11670
      75.0000      1     19      4.8       90.5          1.48028
      80.0000      1     20      4.8       95.2          1.70752
      90.0000      1     21      4.8      100.0          2.16199
       TOTAL      21     21    100.0      100.0


  RIABLE: 25 Q5C

                        CUM                  CUM
       VALUE    FREQ   FREQ        %          %          Z SCORE
      5.00000      1      1      9.1        9.1         -1.07458
```

```
7.00000     1     2     9.1    18.2       -0.973977
```

```
COMMAND: FREQ

VARIABLE: 25 Q5C

                         CUM                CUM
      VALUE     FREQ    FREQ         %        %          Z SCORE
     8.00000       1       3       9.1     27.3        -0.923677
     17.0000       1       4       9.1     36.4        -0.470984
     20.0000       1       5       9.1     45.5        -0.320086
     25.0000       1       6       9.1     54.5       -0.0685899
     26.0000       1       7       9.1     63.6       -0.0182906
     33.0000       1       8       9.1     72.7         0.333804
     34.0000       1       9       9.1     81.8         0.384103
     40.0000       1      10       9.1     90.9         0.685899
     75.0000       1      11       9.1    100.0          2.44637
      TOTAL       11      11     100.0    100.0
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4       =      41.0000 THRU       89.0000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

24 CASES ( 42.1%) ARE IN THIS SUBSET

                     VALID        NUMBER
VARIABLE             CASES       MISSING    % MISSING
 26 Q6A                 23             1          4.2
 27 Q6B                 22             2          8.3
 28 Q7                  22             2          8.3

                                                        STD ERROR      COEFF OF
VARIABLE              MEAN      STD.DEV.      VARIANCE     OF MEAN     VARIATION
 26 Q6A            7.43478       9.31678       86.8024     1.94268       125.313
 27 Q6B            59.7727       39.9547       1596.37     8.51836       66.8443
 28 Q7             132.227       111.512       12434.9     23.7744       84.3333


VARIABLE           MINIMUM       MAXIMUM         RANGE       TOTAL
 26 Q6A            1.00000       45.0000       44.0000     171.000
 27 Q6B            5.00000       150.000       145.000     1315.00
 28 Q7             15.0000       480.000       465.000     2909.00
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4       =      41.0000 THRU       89.0000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

24 CASES ( 42.1%) ARE IN THIS SUBSET

                        VALID        NUMBER
VARIABLE                CASES       MISSING     % MISSING
 29 Q8A                    24             0           0.0
 30 Q8B                    24             0           0.0
 31 Q8C                    23             1           4.2
 32 Q8D                    23             1           4.2
 33 Q9                     20             4          16.7

                                                             STD ERROR       COEFF OF
VARIABLE                 MEAN      STD.DEV.      VARIANCE      OF MEAN      VARIATION
 29 Q8A               7.58333       1.86307       3.47101     0.380297        24.5679
 30 Q8B               7.00000       1.76930       3.13043     0.361158        25.2758
 31 Q8C               8.78261       1.08530       1.17787     0.226300        12.3573
 32 Q8D               7.47826       1.83079       3.35178     0.381745        24.4814
 33 Q9                6.30000       2.57723       6.64211     0.576286        40.9084


VARIABLE              MINIMUM       MAXIMUM         RANGE        TOTAL
 29 Q8A               3.00000       10.0000       7.00000      182.000
 30 Q8B               3.00000       10.0000       7.00000      168.000
 31 Q8C               5.00000       10.0000       5.00000      202.000
 32 Q8D               2.00000       10.0000       8.00000      172.000
 33 Q9                1.00000       10.0000       9.00000      126.000
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4      =      41.0000 THRU       89.0000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

24 CASES ( 42.1%) ARE IN THIS SUBSET

                     VALID       NUMBER
VARIABLE             CASES      MISSING    % MISSING
 34 Q10A               23            1          4.2
 35 Q10B               16            8         33.3
 36 Q10C               24            0          0.0
 37 Q10D               21            3         12.5
 38 Q10E               23            1          4.2
 39 Q10F               17            7         29.2

                                                       STD ERROR     COEFF OF
VARIABLE              MEAN     STD.DEV.     VARIANCE     OF MEAN    VARIATION
 34 Q10A           8.26087      1.42118      2.01976    0.296337      17.2038
 35 Q10B           7.75000      1.39044      1.93333    0.347611      17.9412
 36 Q10C           7.95833      1.51741      2.30254    0.309740      19.0669
 37 Q10D           7.14286      2.47560      6.12857    0.540219      34.6583
 38 Q10E           7.95652      1.46095      2.13439    0.304630      18.3617
 39 Q10F           7.88235      1.36393      1.86029    0.330801      17.3035

VARIABLE           MINIMUM      MAXIMUM        RANGE       TOTAL
 34 Q10A           3.00000      10.0000      7.00000     190.000
 35 Q10B           5.00000      10.0000      5.00000     124.000
 36 Q10C           3.00000      10.0000      7.00000     191.000
 37 Q10D           2.00000      10.0000      8.00000     150.000
 38 Q10E           4.00000      10.0000      6.00000     183.000
 39 Q10F           5.00000      10.0000      5.00000     134.000
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4        =       41.0000 THRU       89.0000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

24 CASES ( 42.1%) ARE IN THIS SUBSET

                      VALID        NUMBER
VARIABLE              CASES       MISSING    % MISSING
 40 Q12A1                 1            23         95.8
 41 Q12A2                 0            24        100.0
 42 Q12A3                 0            24        100.0
 43 Q12A4                 5            19         79.2
 44 Q12B1                 3            21         87.5
 45 Q12B2                 1            23         95.8
 46 Q12B3                 0            24        100.0
 47 Q12B4                 5            19         79.2

                                                          STD ERROR      COEFF OF
VARIABLE                MEAN      STD.DEV.     VARIANCE     OF MEAN     VARIATION
 40 Q12A1            1.00000       0.00000      0.00000     0.00000       0.00000
 41 Q12A2            0.00000       0.00000      0.00000     0.00000       0.00000
 42 Q12A3            0.00000       0.00000      0.00000     0.00000       0.00000
 43 Q12A4            3.20000       3.89872      15.2000     1.74356       121.835
 [illegible]4 Q12B1            1.33333      0.577350     0.333333    0.333333       43.3013
 45 Q12B2            2.00000       0.00000      0.00000     0.00000       0.00000
 46 Q12B3            0.00000       0.00000      0.00000     0.00000       0.00000
 47 Q12B4            3.20000       3.89872      15.2000     1.74356       121.835


VARIABLE             MINIMUM       MAXIMUM        RANGE       TOTAL
 40 Q12A1            1.00000       1.00000      0.00000     1.00000
 41 Q12A2          MISSING       MISSING        0.00000     0.00000
 42 Q12A3          MISSING       MISSING        0.00000     0.00000
 43 Q12A4            1.00000       10.0000      9.00000     16.0000
 44 Q12B1            1.00000       2.00000      1.00000     4.00000
 45 Q12B2            2.00000       2.00000      0.00000     2.00000
 46 Q12B3          MISSING       MISSING        0.00000     0.00000
 47 Q12B4            1.00000       10.0000      9.00000     16.0000
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4       =      41.0000 THRU       89.0000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

24 CASES ( 42.1%) ARE IN THIS SUBSET

                      VALID        NUMBER
VARIABLE              CASES       MISSING      % MISSING
 48 Q13A1                12            12           50.0
 49 Q13A2                12            12           50.0
 50 Q13A3                 2            22           91.7
 51 Q13A4                 9            15           62.5
 52 Q13B1                15             9           37.5
 53 Q13B2                13            11           45.8
 54 Q13B3                 2            22           91.7
 55 Q13B4                 8            16           66.7

                                                          STD ERROR      COEFF OF
VARIABLE               MEAN      STD.DEV.      VARIANCE     OF MEAN     VARIATION
 48 Q13A1           6.33333       8.42435       70.9697     2.43190       133.016
 49 Q13A2           4.00000       4.00000       16.0000     1.15470      100.0000
 50 Q13A3           4.00000       4.24264       18.0000     3.00000       106.066
 51 Q13A4           33.1111       62.0412       3849.11     20.6804       187.373
 52 Q13B1           60.8667       64.9735       4221.55     16.7761       106.747
 53 Q13B2           50.7692       64.8076       4200.03     17.9744       127.651
 54 Q13B3           90.5000       126.572       16020.5     89.5000       139.859
 55 Q13B4           62.7500       82.6589       6832.50     29.2243       131.727


VARIABLE            MINIMUM       MAXIMUM         RANGE       TOTAL
 48 Q13A1           1.00000       30.0000       29.0000     76.0000
 49 Q13A2           1.00000       14.0000       13.0000     48.0000
 50 Q13A3           1.00000       7.00000       6.00000     8.00000
 51 Q13A4           1.00000       180.000       179.000     298.000
 52 Q13B1           1.00000       180.000       179.000     913.000
 53 Q13B2           1.00000       180.000       179.000     660.000
 54 Q13B3           1.00000       180.000       179.000     181.000
 55 Q13B4           1.00000       180.000       179.000     502.000
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4       =      41.0000 THRU       89.0000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

24 CASES ( 42.1%) ARE IN THIS SUBSET

                     VALID        NUMBER
VARIABLE             CASES       MISSING     % MISSING
 56 Q14A1               24             0           0.0
 57 Q14A2               21             3          12.5
 58 Q14A3                5            19          79.2
 59 Q14A4               15             9          37.5
 60 Q14B1               20             4          16.7
 61 Q14B2               19             5          20.8
 62 Q14B3                3            21          87.5
 63 Q14B4               13            11          45.8
 64 Q14C1               16             8          33.3
 65 Q14C2               16             8          33.3
 66 Q14C3                2            22          91.7
 67 Q14C4               11            13          54.2

                                                           STD ERROR       COEFF OF
VARIABLE              MEAN      STD.DEV.      VARIANCE       OF MEAN      VARIATION
 56 Q14A1          7.08333       2.30154       5.29710      0.469801        32.4924
 57 Q14A2          7.90476       1.37495       1.89048      0.300038        17.3939
 58 Q14A3          7.20000       2.68328       7.20000       1.20000        37.2678
 59 Q14A4          7.73333       1.22280       1.49524      0.315725        15.8121
 60 Q14B1          8.40000       1.31389       1.72632      0.293795        15.6416
 61 Q14B2          8.21053       1.22832       1.50877      0.281796        14.9603
 62 Q14B3          8.66667       1.52753       2.33333      0.881917        17.6253
 63 Q14B4          7.46154       1.50640       2.26923      0.417799        20.1888
 64 Q14C1          7.75000       1.77012       3.13333      0.442531        22.8403
 65 Q14C2          7.50000       1.54919       2.40000      0.387298        20.6559
 66 Q14C3          6.50000       2.12132       4.50000       1.50000        32.6357
 67 Q14C4          6.54545       1.86353       3.47273      0.561874        28.4705


VARIABLE           MINIMUM       MAXIMUM         RANGE         TOTAL
 56 Q14A1          2.00000       10.0000       8.00000       170.000
 57 Q14A2          5.00000       10.0000       5.00000       166.000
 58 Q14A3          3.00000       10.0000       7.00000       36.0000
 59 Q14A4          5.00000       10.0000       5.00000       116.000
 60 Q14B1          5.00000       10.0000       5.00000       168.000
 61 Q14B2          5.00000       10.0000       5.00000       156.000
 62 Q14B3          7.00000       10.0000       3.00000       26.0000
 63 Q14B4          3.00000       9.00000       6.00000       97.0000
 64 Q14C1          3.00000       10.0000       7.00000       124.000
 65 Q14C2          5.00000       10.0000       5.00000       120.000
 66 Q14C3          5.00000       8.00000       3.00000       13.0000
 67 Q14C4          3.00000       9.00000       6.00000       72.0000
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4      =      41.0000 THRU       89.0000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

24 CASES ( 42.1%) ARE IN THIS SUBSET

                     VALID        NUMBER
VARIABLE             CASES       MISSING     % MISSING
 68 Q15A1               18             6          25.0
 69 Q15A2               14            10          41.7
 70 Q15A3                1            23          95.8
 71 Q15A4               10            14          58.3
 72 Q15B1               18             6          25.0
 73 Q15B2               18             6          25.0
 74 Q15B3                3            21          87.5
 75 Q15B4               10            14          58.3
 76 Q15C1               18             6          25.0
 77 Q15C2               13            11          45.8
 78 Q15C3                2            22          91.7
 79 Q15C4               10            14          58.3
 80 Q15D1               23             1           4.2
 81 Q15D2               21             3          12.5
 82 Q15D3                3            21          87.5
 83 Q15D4               13            11          45.8
 84 Q15E1               18             6          25.0
 85 Q15E2               13            11          45.8
 86 Q15E3                3            21          87.5
 87 Q15E4                9            15          62.5

                                                           STD ERROR       COEFF OF
VARIABLE              MEAN       STD.DEV.      VARIANCE      OF MEAN      VARIATION
 68 Q15A1          7.44444        1.19913       1.43791     0.282637        16.1077
 69 Q15A2          7.78571        1.62569       2.64286     0.434483        20.8804
 70 Q15A3          10.0000        0.00000       0.00000      0.00000        0.00000
 71 Q15A4          7.30000        1.25167       1.56667     0.395811        17.1461
 72 Q15B1          6.88889        1.84355       3.39869     0.434530        26.7613
 73 Q15B2          8.05556        1.39209       1.93791     0.328118        17.2811
 74 Q15B3          8.66667        1.52753       2.33333     0.881917        17.6253
 75 Q15B4          6.80000        1.22927       1.51111     0.388730        18.0775
 76 Q15C1          7.83333        1.88648       3.55882     0.444649        24.0828
 77 Q15C2          7.76923        1.36344       1.85897     0.378151        17.5493
 78 Q15C3          7.00000        2.82843       8.00000      2.00000        40.4061
 79 Q15C4          6.80000        1.54919       2.40000     0.489898        22.7823
 80 Q15D1          8.08696        1.75585       3.08300     0.366120        21.7121
 81 Q15D2          8.33333        1.71270       2.93333     0.373741        20.5524
 82 Q15D3          9.33333        1.15470       1.33333     0.666667        12.3718
 83 Q15D4          6.38462        2.06311       4.25641     0.572203        32.3137
 84 Q15E1          7.77778        1.55509       2.41830     0.366538        19.9940
 85 Q15E2          8.00000        1.29099       1.66667     0.358057        16.1374
 86 Q15E3          8.66667        1.15470       1.33333     0.666667        13.3235
 87 Q15E4          7.77778       0.971825      0.944444     0.323942        12.4949
```

```
COMMAND: DESC

VARIABLE             MINIMUM       MAXIMUM        RANGE         TOTAL
 68 Q15A1            5.00000       9.00000        4.00000       134.000
 69 Q15A2            5.00000       10.0000        5.00000       109.000
 70 Q15A3            10.0000       10.0000        0.00000       10.0000
 71 Q15A4            5.00000       9.00000        4.00000       73.0000
 72 Q15B1            1.00000       9.00000        8.00000       124.000
 73 Q15B2            5.00000       10.0000        5.00000       145.000
 74 Q15B3            7.00000       10.0000        3.00000       26.0000
 75 Q15B4            5.00000       9.00000        4.00000       68.0000
 76 Q15C1            3.00000       10.0000        7.00000       141.000
 77 Q15C2            5.00000       10.0000        5.00000       101.000
 78 Q15C3            5.00000       9.00000        4.00000       14.0000
 79 Q15C4            3.00000       9.00000        6.00000       68.0000
 80 Q15D1            2.00000       10.0000        8.00000       186.000
 81 Q15D2            4.00000       10.0000        6.00000       175.000
 82 Q15D3            8.00000       10.0000        2.00000       28.0000
 83 Q15D4            3.00000       9.00000        6.00000       83.0000
 84 Q15E1            4.00000       10.0000        6.00000       140.000
 85 Q15E2            5.00000       10.0000        5.00000       104.000
 86 Q15E3            8.00000       10.0000        2.00000       26.0000
 87 Q15E4            7.00000       10.0000        3.00000       70.0000
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4       =      41.0000 THRU       89.0000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

24 CASES ( 42.1%) ARE IN THIS SUBSET

24 CASES (100.0%) ARE VALID

                                                         STD ERROR      COEFF OF
VARIABLE                 MEAN      STD.DEV.      VARIANCE      OF MEAN     VARIATION
 88 Q16               8.04167       1.68056       2.82428     0.343042       20.8981


VARIABLE              MINIMUM       MAXIMUM         RANGE        TOTAL
 88 Q16               3.00000       10.0000       7.00000      193.000
```

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4       =      41.0000 THRU       89.0000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 89 Q17

                          CUM                CUM
       VALUE    FREQ    FREQ        %          %           Z SCORE
      1.00000      7       7     31.8       31.8          -1.21611
      2.00000     11      18     50.0       81.8          0.192018
      3.00000      4      22     18.2      100.0           1.60015
       TOTAL      22      22    100.0      100.0


VARIABLE: 90 Q18A

                          CUM                CUM
       VALUE    FREQ    FREQ        %          %           Z SCORE
      1.00000      9       9     37.5       37.5          -1.26381
      2.00000     15      24     62.5      100.0          0.758288
       TOTAL      24      24    100.0      100.0


VARIABLE: 91 Q18B

                          CUM                CUM
       VALUE    FREQ    FREQ        %          %           Z SCORE
      1.00000      7       7     77.8       77.8         -0.503953
      2.00000      2       9     22.2      100.0           1.76383
       TOTAL       9       9    100.0      100.0
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4       =      41.0000 THRU       89.0000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

24 CASES ( 42.1%) ARE IN THIS SUBSET

                     VALID       NUMBER
VARIABLE             CASES      MISSING     % MISSING
 92 Q20A                24            0           0.0
 93 Q20B                19            5          20.8
 94 Q20C                24            0           0.0

                                                        STD ERROR      COEFF OF
VARIABLE              MEAN     STD.DEV.      VARIANCE     OF MEAN     VARIATION
 92 Q20A           7.95833      1.51741       2.30254    0.309740       19.0669
 93 Q20B           7.31579      2.21241       4.89474    0.507561       30.2415
 94 Q20C           7.95833      1.96666       3.86775    0.401443       24.7120


VARIABLE           MINIMUM      MAXIMUM         RANGE       TOTAL
 92 Q20A           4.00000      10.0000       6.00000     191.000
 93 Q20B           2.00000      10.0000       8.00000     139.000
 94 Q20C           1.00000      10.0000       9.00000     191.000
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4      =      41.0000 THRU       89.0000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

24 CASES ( 42.1%) ARE IN THIS SUBSET

                       VALID        NUMBER
VARIABLE               CASES       MISSING     % MISSING
 95 Q20D1                 20             4          16.7
 96 Q20D2                 24             0           0.0
 97 Q20D3                 21             3          12.5

                                                             STD ERROR      COEFF OF
VARIABLE                MEAN      STD.DEV.      VARIANCE       OF MEAN     VARIATION
 95 Q20D1            5.20750       22.0816       487.597       4.93760       424.034
 96 Q20D2           0.704583      0.599050      0.358861      0.122281       85.0219
 97 Q20D3            11.7143       20.5600       422.714       4.48656       175.512


VARIABLE             MINIMUM       MAXIMUM         RANGE         TOTAL
 95 Q20D1          0.0300000       99.0000       98.9700       104.150
 96 Q20D2          0.0800000       2.00000       1.92000       16.9100
 97 Q20D3            1.00000       99.0000       98.0000       246.000
```

```
COMMAND: FREQ

SELECTION ON VAR 21 Q4       =      41.0000 THRU       89.0000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 98 Q20E

                      CUM               CUM
      VALUE   FREQ   FREQ       %         %         Z SCORE
     1.00000    20     20    83.3      83.3       -0.437798
     2.00000     4     24    16.7     100.0         2.18899
      TOTAL     24     24   100.0     100.0


VARIABLE: 99 Q20F

                      CUM               CUM
      VALUE   FREQ   FREQ       %         %         Z SCORE
     1.00000    18     18    85.7      85.7       -0.398410
     2.00000     3     21    14.3     100.0         2.39046
      TOTAL     21     21   100.0     100.0


VARIABLE: 100 Q21A

                      CUM               CUM
      VALUE   FREQ   FREQ       %         %         Z SCORE
     1.00000    16     16    66.7      66.7       -0.692219
     2.00000     8     24    33.3     100.0         1.38444
      TOTAL     24     24   100.0     100.0
```

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4       =      41.0000 THRU       89.0000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 101 Q22A

                          CUM                CUM
       VALUE     FREQ   FREQ          %         %          Z SCORE
      1.00000       9      9       56.3      56.3        -0.853913
      2.00000       7     16       43.8     100.0          1.09789
       TOTAL       16     16      100.0     100.0


VARIABLE: 102 Q22B

                          CUM                CUM
       VALUE     FREQ   FREQ          %         %          Z SCORE
      1.00000      14     14       58.3      58.3        -0.827360
      2.00000      10     24       41.7     100.0          1.15830
       TOTAL       24     24      100.0     100.0


VARIABLE: 103 Q24A

                          CUM                CUM
       VALUE     FREQ   FREQ          %         %          Z SCORE
      1.00000      19     19       82.6      82.6        -0.448746
      2.00000       4     23       17.4     100.0          2.13154
       TOTAL       23     23      100.0     100.0
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4       =      41.0000 THRU       89.0000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

24 CASES ( 42.1%) ARE IN THIS SUBSET

23 CASES ( 95.8%) ARE VALID

                                                            STD ERROR      COEFF OF
VARIABLE                MEAN      STD.DEV.      VARIANCE     OF MEAN      VARIATION
104 Q24B             7.60870       1.33958       1.79447    0.279321        17.6059


VARIABLE             MINIMUM       MAXIMUM         RANGE       TOTAL
104 Q24B             3.00000       10.0000       7.00000     175.000
```

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4       =      41.0000 THRU       89.0000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 105 Q26A

                        CUM                CUM
       VALUE    FREQ   FREQ       %          %           Z SCORE
     1.00000      20     20     87.0      87.0         -0.362478
     2.00000       1     21      4.3      91.3           1.30492
     3.00000       2     23      8.7     100.0           2.97232
      TOTAL       23     23    100.0     100.0
```

90-100% UTILIZATION

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4       =       90.0000 THRU       100.000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 10 Q1D

                         CUM                 CUM
       VALUE    FREQ  FREQ          %          %          Z SCORE
      1.00000      6      6      27.3      27.3          -1.59545
      2.00000     16     22      72.7     100.0          0.598293
       TOTAL      22     22     100.0     100.0
```

```
ABSTAT 4.07            CRAY USER SATISFACTION SURVEY - 90-100% UTILIZATION
FILE: ZCR3            REV#206                                APR 30 '87     PAGE  2

COMMAND: DESC


SELECTION ON VAR 21 Q4       =      90.0000 THRU       100.000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

23 CASES ( 40.4%) ARE IN THIS SUBSET

                          VALID         NUMBER
VARIABLE                  CASES        MISSING    % MISSING
 11 Q2A                      23              0          0.0
 12 Q2B                      23              0          0.0
 13 Q2C1                     23              0          0.0
 14 Q2C2                     23              0          0.0
 15 Q2C3                     23              0          0.0
 16 Q2C4                     22              1          4.3
 17 Q2D                      22              1          4.3
 18 Q2E                      23              0          0.0
 19 Q2F                      22              1          4.3
 20 Q2G                      23              0          0.0

                                                            STD ERROR      COEFF OF
VARIABLE                   MEAN      STD.DEV.      VARIANCE      OF MEAN     VARIATION
 11 Q2A                 9.00000      0.953463      0.909091     0.198811       10.5940
 12 Q2B                 8.43478       1.72748       2.98419     0.360205       20.4804
 13 Q2C1                7.30435       2.43898       5.94862     0.508562       33.3908
 14 Q2C2                7.26087       2.37826       5.65613     0.495902       32.7545
 15 Q2C3                5.39130       2.18963       4.79447     0.456569       40.6140
 16 Q2C4                6.81818       2.36314       5.58442     0.503822       34.6593
 17 Q2D                 7.54545       2.36497       5.59307     0.504213       31.3429
 18 Q2E                 5.43478       2.72740       7.43874     0.568703       50.1842
 19 Q2F                 6.90909       1.63034       2.65801     0.347590       23.5970
 20 Q2G                 7.52174       1.87979       3.53360     0.391963       24.9914


VARIABLE                MINIMUM       MAXIMUM         RANGE        TOTAL
 11 Q2A                 7.00000       10.0000       3.00000      207.000
 12 Q2B                 4.00000       10.0000       6.00000      194.000
 13 Q2C1                1.00000       10.0000       9.00000      168.000
 14 Q2C2                1.00000       10.0000       9.00000      167.000
 15 Q2C3                1.00000       9.00000       8.00000      124.000
 16 Q2C4                1.00000       10.0000       9.00000      150.000
 17 Q2D                 1.00000       10.0000       9.00000      166.000
 18 Q2E                 1.00000       10.0000       9.00000      125.000
 19 Q2F                 2.00000       9.00000       7.00000      152.000
 20 Q2G                 4.00000       10.0000       6.00000      173.000
```

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4       =      90.0000 THRU       100.000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 11 Q2A

                         CUM                 CUM
      VALUE    FREQ    FREQ        %          %          Z SCORE
     7.00000      1       1      4.3        4.3         -2.09762
     8.00000      7       8     30.4       34.8         -1.04881
     9.00000      6      14     26.1       60.9    3.052435E-11
     10.0000      9      23     39.1      100.0          1.04881
      TOTAL      23      23    100.0      100.0


VARIABLE: 12 Q2B

                         CUM                 CUM
      VALUE    FREQ    FREQ        %          %          Z SCORE
     4.00000      1       1      4.3        4.3         -2.56720
     5.00000      1       2      4.3        8.7         -1.98832
     6.00000      1       3      4.3       13.0         -1.40944
     7.00000      3       6     13.0       26.1        -0.830564
     8.00000      3       9     13.0       39.1        -0.251686
     9.00000      6      15     26.1       65.2         0.327192
     10.0000      8      23     34.8      100.0         0.906069
      TOTAL      23      23    100.0      100.0


VARIABLE: 13 Q2C1

                         CUM                 CUM
      VALUE    FREQ    FREQ        %          %          Z SCORE
     1.00000      2       2      8.7        8.7         -2.58483
     5.00000      2       4      8.7       17.4        -0.944800
     6.00000      2       6      8.7       26.1        -0.534793
     7.00000      2       8      8.7       34.8        -0.124785
     8.00000      8      16     34.8       69.6         0.285223
     9.00000      4      20     17.4       87.0         0.695230
     10.0000      3      23     13.0      100.0          1.10524
      TOTAL      23      23    100.0      100.0
```

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4       =      90.0000 THRU       100.000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 14 Q2C2

                        CUM               CUM
       VALUE    FREQ   FREQ       %         %          Z SCORE
      1.00000      2      2     8.7       8.7         -2.63254
      5.00000      1      3     4.3      13.0        -0.950640
      6.00000      3      6    13.0      26.1        -0.530164
      7.00000      3      9    13.0      39.1        -0.109689
      8.00000      8     17    34.8      73.9         0.310786
      9.00000      3     20    13.0      87.0         0.731261
      10.0000      3     23    13.0     100.0          1.15174
       TOTAL      23     23   100.0     100.0


VARIABLE: 15 Q2C3

                        CUM               CUM
       VALUE    FREQ   FREQ       %         %          Z SCORE
      1.00000      2      2     8.7       8.7         -2.00550
      2.00000      1      3     4.3      13.0         -1.54880
      3.00000      1      4     4.3      17.4         -1.09211
      4.00000      3      7    13.0      30.4        -0.635407
      5.00000      4     11    17.4      47.8        -0.178708
      6.00000      3     14    13.0      60.9         0.277991
      7.00000      6     20    26.1      87.0         0.734689
      8.00000      2     22     8.7      95.7          1.19139
      9.00000      1     23     4.3     100.0          1.64809
       TOTAL      23     23   100.0     100.0


VARIABLE: 16 Q2C4

                        CUM               CUM
       VALUE    FREQ   FREQ       %         %          Z SCORE
      1.00000      2      2     9.1       9.1         -2.46206
      5.00000      2      4     9.1      18.2        -0.769393
      6.00000      5      9    22.7      40.9        -0.346227
      7.00000      3     12    13.6      54.5        0.0769393
      8.00000      4     16    18.2      72.7         0.500106
      9.00000      5     21    22.7      95.5         0.923272
      10.0000      1     22     4.5     100.0          1.34644
       TOTAL      22     22   100.0     100.0
```

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4       =      90.0000 THRU       100.000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 17 Q2D

                      CUM               CUM
      VALUE    FREQ   FREQ       %        %          Z SCORE
     1.00000      2      2     9.1      9.1         -2.76767
     6.00000      2      4     9.1     18.2        -0.653478
     7.00000      2      6     9.1     27.3        -0.230639
     8.00000      8     14    36.4     63.6         0.192199
     9.00000      6     20    27.3     90.9         0.615038
     10.0000      2     22     9.1    100.0          1.03788
      TOTAL      22     22   100.0    100.0


VARIABLE: 18 Q2E

                      CUM               CUM
      VALUE    FREQ   FREQ       %        %          Z SCORE
     1.00000      3      3    13.0     13.0         -1.62601
     2.00000      1      4     4.3     17.4         -1.25936
     3.00000      1      5     4.3     21.7        -0.892710
     4.00000      4      9    17.4     39.1        -0.526062
     5.00000      3     12    13.0     52.2        -0.159413
     6.00000      1     13     4.3     56.5         0.207236
     7.00000      4     17    17.4     73.9         0.573885
     8.00000      4     21    17.4     91.3         0.940534
     10.0000      2     23     8.7    100.0          1.67383
      TOTAL      23     23   100.0    100.0
```

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4       =      90.0000 THRU       100.000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 19 Q2F

                          CUM                CUM
      VALUE    FREQ   FREQ          %          %          Z SCORE
     2.00000      1      1        4.5        4.5         -3.01108
     5.00000      2      3        9.1       13.6         -1.17098
     6.00000      5      8       22.7       36.4        -0.557608
     7.00000      5     13       22.7       59.1        0.0557608
     8.00000      6     19       27.3       86.4         0.669130
     9.00000      3     22       13.6      100.0          1.28250
      TOTAL      22     22      100.0      100.0


VARIABLE: 20 Q2G

                          CUM                CUM
      VALUE    FREQ   FREQ          %          %          Z SCORE
     4.00000      1      1        4.3        4.3         -1.87348
     5.00000      4      5       17.4       21.7         -1.34150
     6.00000      1      6        4.3       26.1        -0.809528
     7.00000      5     11       21.7       47.8        -0.277552
     8.00000      5     16       21.7       69.6         0.254423
     9.00000      2     18        8.7       78.3         0.786398
     10.0000      5     23       21.7      100.0          1.31837
      TOTAL      23     23      100.0      100.0
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4       =      90.0000 THRU       100.000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

23 CASES ( 40.4%) ARE IN THIS SUBSET

                      VALID       NUMBER
VARIABLE              CASES       MISSING     % MISSING
 21 Q4                   23             0           0.0
 22 Q5                   21             2           8.7
 23 Q5A                  21             2           8.7
 24 Q5B                  19             4          17.4
 25 Q5C                  11            12          52.2

                                                          STD ERROR     COEFF OF
VARIABLE               MEAN      STD.DEV.     VARIANCE      OF MEAN    VARIATION
 21 Q4              95.9130       4.04422      16.3557     0.843279      4.21655
 22 Q5              8.66667       6.53707      42.7333      1.42651      75.4278
 23 Q5A             53.9048       27.5280      757.790      6.00710      51.0678
 24 Q5B             40.0000       21.3854      457.333      4.90614      53.4634
 25 Q5C             18.9091       15.8963      252.691      4.79290      84.0667


  RIABLE            MINIMUM       MAXIMUM        RANGE        TOTAL
 21 Q4              90.0000       100.000      10.0000      2206.00
 22 Q5              1.00000       25.0000      24.0000      182.000
 23 Q5A             3.00000       100.000      97.0000      1132.00
 24 Q5B             6.00000       80.0000      74.0000      760.000
 25 Q5C             2.00000       50.0000      48.0000      208.000
```

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4       =      90.0000 THRU       100.000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 23 Q5A

                          CUM                  CUM
       VALUE    FREQ    FREQ         %          %          Z SCORE
      3.00000      1       1       4.8        4.8         -1.84920
      20.0000      2       3       9.5       14.3         -1.23165
      30.0000      1       4       4.8       19.0        -0.868380
      33.0000      2       6       9.5       28.6        -0.759400
      34.0000      1       7       4.8       33.3        -0.723073
      40.0000      1       8       4.8       38.1        -0.505114
      43.0000      1       9       4.8       42.9        -0.396134
      50.0000      3      12      14.3       57.1        -0.141847
      60.0000      1      13       4.8       61.9         0.221420
      67.0000      1      14       4.8       66.7         0.475706
      71.0000      1      15       4.8       71.4         0.621013
      75.0000      2      17       9.5       81.0         0.766319
      90.0000      2      19       9.5       90.5          1.31122
      98.0000      1      20       4.8       95.2          1.60183
      100.000      1      21       4.8      100.0          1.67449
       TOTAL      21      21     100.0      100.0


VARIABLE: 24 Q5B

                          CUM                  CUM
       VALUE    FREQ    FREQ         %          %          Z SCORE
      6.00000      1       1       5.3        5.3         -1.58987
      10.0000      2       3      10.5       15.8         -1.40283
      20.0000      1       4       5.3       21.1        -0.935220
      25.0000      2       6      10.5       31.6        -0.701415
      27.0000      1       7       5.3       36.8        -0.607893
      33.0000      2       9      10.5       47.4        -0.327327
      43.0000      1      10       5.3       52.6         0.140283
      47.0000      1      11       5.3       57.9         0.327327
      50.0000      3      14      15.8       73.7         0.467610
      55.0000      1      15       5.3       78.9         0.701415
      60.0000      1      16       5.3       84.2         0.935220
      66.0000      1      17       5.3       89.5          1.21579
      70.0000      1      18       5.3       94.7          1.40283
      80.0000      1      19       5.3      100.0          1.87044
       TOTAL      19      19     100.0      100.0


VARIABLE: 25 Q5C

                          CUM                  CUM
       VALUE    FREQ    FREQ         %          %          Z SCORE
      2.00000      1       1       9.1        9.1         -1.06372
      5.00000      2       3      18.2       27.3        -0.874992
      10.0000      2       5      18.2       45.5        -0.560452
```

```
14.0000      1      6      9.1     54.5        -0.308821
```

```
COMMAND: FREQ


VARIABLE: 25 Q5C

                       CUM                CUM
      VALUE    FREQ   FREQ       %          %          Z SCORE
     15.0000      1      7      9.1       63.6       -0.245913
     23.0000      1      8      9.1       72.7        0.257351
     34.0000      1      9      9.1       81.8        0.949337
     40.0000      1     10      9.1       90.9         1.32678
     50.0000      1     11      9.1      100.0         1.95586
      TOTAL      11     11    100.0      100.0
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4       =      90.0000 THRU       100.000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

23 CASES ( 40.4%) ARE IN THIS SUBSET

                     VALID       NUMBER
VARIABLE             CASES      MISSING     % MISSING
 26 Q6A                 22            1           4.3
 27 Q6B                 21            2           8.7
 28 Q7                  19            4          17.4

                                                         STD ERROR      COEFF OF
VARIABLE              MEAN     STD.DEV.      VARIANCE      OF MEAN     VARIATION
 26 Q6A            5.09091      5.82204       33.8961      1.24126       114.361
 27 Q6B            56.0952      23.2076       538.590      5.06430       41.3717
 28 Q7             77.5789      41.2099       1698.26      9.45420       53.1200


VARIABLE           MINIMUM      MAXIMUM         RANGE        TOTAL
 26 Q6A            1.00000      30.0000       29.0000      112.000
 27 Q6B            24.0000      120.000       96.0000      1178.00
 28 Q7             20.0000      150.000       130.000      1474.00
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4       =      90.0000 THRU       100.000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

23 CASES ( 40.4%) ARE IN THIS SUBSET

                         VALID        NUMBER
VARIABLE                 CASES       MISSING     % MISSING
 29 Q8A                     22             1           4.3
 30 Q8B                     23             0           0.0
 31 Q8C                     22             1           4.3
 32 Q8D                     22             1           4.3
 33 Q9                      21             2           8.7

                                                              STD ERROR      COEFF OF
VARIABLE                  MEAN      STD.DEV.      VARIANCE      OF MEAN     VARIATION
 29 Q8A                7.59091       2.28158       5.20563     0.486435       30.0568
 30 Q8B                5.78261       2.23518       4.99605     0.466068       38.6536
 31 Q8C                8.81818       1.29601       1.67965     0.276311       14.6971
 32 Q8D                7.54545       2.24090       5.02165     0.477762       29.6987
 33 Q9                 6.28571       2.14809       4.61429     0.468751       34.1741


VARIABLE               MINIMUM       MAXIMUM         RANGE        TOTAL
 29 Q8A                2.00000       10.0000       8.00000      167.000
 30 Q8B                2.00000       9.00000       7.00000      133.000
 31 Q8C                5.00000       10.0000       5.00000      194.000
 32 Q8D                2.00000       10.0000       8.00000      166.000
 33 Q9                 1.00000       9.00000       8.00000      132.000
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4        =      90.0000 THRU        100.000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

23 CASES ( 40.4%) ARE IN THIS SUBSET

                    VALID         NUMBER
VARIABLE            CASES        MISSING     % MISSING
 34 Q10A               20              3          13.0
 35 Q10B               16              7          30.4
 36 Q10C               21              2           8.7
 37 Q10D               21              2           8.7
 38 Q10E               23              0           0.0
 39 Q10F               22              1           4.3

                                                         STD ERROR      COEFF OF
VARIABLE             MEAN       STD.DEV.      VARIANCE      OF MEAN     VARIATION
 34 Q10A          8.70000        1.17429       1.37895     0.262578       13.4975
 35 Q10B          6.93750        1.87861       3.52917     0.469652       27.0790
 36 Q10C          7.33333        2.43584       5.93333     0.531545       33.2160
 37 Q10D          7.66667        2.05751       4.23333     0.448985       26.8370
 38 Q10E          8.13043        1.42396       2.02767     0.296917       17.5140
 39 Q10F          8.50000       0.912871      0.833333     0.194625       10.7397

VARIABLE          MINIMUM        MAXIMUM         RANGE        TOTAL
 34 Q10A          6.00000        10.0000       4.00000      174.000
 35 Q10B          3.00000        10.0000       7.00000      111.000
 36 Q10C          3.00000        10.0000       7.00000      154.000
 37 Q10D          3.00000        10.0000       7.00000      161.000
 38 Q10E          5.00000        10.0000       5.00000      187.000
 39 Q10F          7.00000        10.0000       3.00000      187.000
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4       =      90.0000 THRU       100.000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

23 CASES ( 40.4%) ARE IN THIS SUBSET

                     VALID       NUMBER
VARIABLE             CASES       MISSING     % MISSING
 40 Q12A1                3            20          87.0
 41 Q12A2                5            18          78.3
 42 Q12A3                3            20          87.0
 43 Q12A4                4            19          82.6
 44 Q12B1                6            17          73.9
 45 Q12B2                7            16          69.6
 46 Q12B3                3            20          87.0
 47 Q12B4                4            19          82.6

                                                              STD ERROR      COEFF OF
VARIABLE                MEAN      STD.DEV.      VARIANCE       OF MEAN      VARIATION
 40 Q12A1            124.333      208.445       43449.3       120.346        167.650
 41 Q12A2            94.8000      156.640       24536.2       70.0517        165.232
 42 Q12A3            66.3333      56.5803       3201.33       32.6667        85.2970
 43 Q12A4            27.0000      48.0833       2312.00       24.0416        178.086
 44 Q12B1            64.8333      147.141       21650.6       60.0702        226.953
 45 Q12B2            76.0000      133.055       17703.7       50.2901        175.073
 46 Q12B3            66.3333      56.5803       3201.33       32.6667        85.2970
 47 Q12B4            32.7500      46.2340       2137.58       23.1170        141.173


VARIABLE             MINIMUM      MAXIMUM         RANGE         TOTAL
 40 Q12A1            1.00000      365.000       364.000       373.000
 41 Q12A2            1.00000      365.000       364.000       474.000
 42 Q12A3            1.00000      99.0000       98.0000       199.000
 43 Q12A4            1.00000      99.0000       98.0000       108.000
 44 Q12B1            1.00000      365.000       364.000       389.000
 45 Q12B2            1.00000      365.000       364.000       532.000
 46 Q12B3            1.00000      99.0000       98.0000       199.000
 47 Q12B4            1.00000      99.0000       98.0000       131.000
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4        =      90.0000 THRU       100.000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

23 CASES ( 40.4%) ARE IN THIS SUBSET

                     VALID         NUMBER
VARIABLE             CASES        MISSING     % MISSING
 48 Q13A1               11             12          52.2
 49 Q13A2               15              8          34.8
 50 Q13A3                4             19          82.6
 51 Q13A4                9             14          60.9
 52 Q13B1               13             10          43.5
 53 Q13B2               17              6          26.1
 54 Q13B3                5             18          78.3
 55 Q13B4                8             15          65.2

                                                           STD ERROR      COEFF OF
VARIABLE              MEAN       STD.DEV.      VARIANCE     OF MEAN      VARIATION
 48 Q13A1          48.9091        110.369       12181.3     33.2775        225.661
 49 Q13A2          74.2000        100.854       10171.6     26.0405        135.922
 50 Q13A3          80.2500        52.4428       2750.25     26.2214        65.3493
 51 Q13A4          32.6667        45.3652       2058.00     15.1217        138.873
 52 Q13B1          106.462        130.393       17002.3     36.1644        122.479
 53 Q13B2          118.235        130.472       17022.9     31.6441        110.349
 54 Q13B3          79.0000        72.3637       5236.50     32.3620        91.5996
 55 Q13B4          67.1250        75.7297       5734.98     26.7745        112.819


VARIABLE           MINIMUM        MAXIMUM         RANGE       TOTAL
 48 Q13A1          2.00000        365.000       363.000     538.000
 49 Q13A2          1.00000        365.000       364.000     1113.00
 50 Q13A3          3.00000        120.000       117.000     321.000
 51 Q13A4          1.00000        120.000       119.000     294.000
 52 Q13B1          2.00000        365.000       363.000     1384.00
 53 Q13B2          2.00000        365.000       363.000     2010.00
 54 Q13B3          7.00000        180.000       173.000     395.000
 55 Q13B4          7.00000        180.000       173.000     537.000
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4       =      90.0000 THRU       100.000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

23 CASES ( 40.4%) ARE IN THIS SUBSET

                      VALID        NUMBER
VARIABLE              CASES       MISSING     % MISSING
 56 Q14A1                19             4          17.4
 57 Q14A2                22             1           4.3
 58 Q14A3                 5            18          78.3
 59 Q14A4                13            10          43.5
 60 Q14B1                17             6          26.1
 61 Q14B2                20             3          13.0
 62 Q14B3                 7            16          69.6
 63 Q14B4                10            13          56.5
 64 Q14C1                18             5          21.7
 65 Q14C2                21             2           8.7
 66 Q14C3                 6            17          73.9
 67 Q14C4                10            13          56.5

                                                             STD ERROR      COEFF OF
 RIABLE                MEAN       STD.DEV.      VARIANCE       OF MEAN     VARIATION
  6 Q14A1           7.05263       0.970320      0.941520      0.222607       13.7583
 57 Q14A2           7.13636        1.64159       2.69481      0.349987       23.0031
 58 Q14A3           7.40000       0.547723      0.300000      0.244949       7.40166
 59 Q14A4           7.46154        1.61325       2.60256      0.447434       21.6208
 60 Q14B1           6.88235        2.23278       4.98529      0.541528       32.4421
 61 Q14B2           6.75000        1.88833       3.56579      0.422243       27.9753
 62 Q14B3           6.42857        2.50713       6.28571      0.947607       38.9998
 63 Q14B4           8.50000       0.971825      0.944444      0.307318       11.4332
 64 Q14C1           5.94444        2.09964       4.40850      0.494890       35.3211
 65 Q14C2           6.00000        2.02485       4.10000      0.441858       33.7474
 66 Q14C3           6.00000        2.75681       7.60000       1.12546       45.9468
 67 Q14C4           8.10000        1.37032       1.87778      0.433333       16.9175


VARIABLE            MINIMUM        MAXIMUM         RANGE         TOTAL
 56 Q14A1           5.00000        9.00000       4.00000       134.000
 57 Q14A2           3.00000        9.00000       6.00000       157.000
 58 Q14A3           7.00000        8.00000       1.00000       37.0000
 59 Q14A4           4.00000        10.0000       6.00000       97.0000
 60 Q14B1           1.00000        10.0000       9.00000       117.000
 61 Q14B2           2.00000        10.0000       8.00000       135.000
 62 Q14B3           1.00000        9.00000       8.00000       45.0000
 63 Q14B4           7.00000        10.0000       3.00000       85.0000
 64 Q14C1           1.00000        9.00000       8.00000       107.000
 65 Q14C2           2.00000        9.00000       7.00000       126.000
  6 Q14C3           1.00000        9.00000       8.00000       36.0000
 67 Q14C4           5.00000        10.0000       5.00000       81.0000
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4        =       90.0000 THRU       100.000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

23 CASES ( 40.4%) ARE IN THIS SUBSET

                     VALID        NUMBER
VARIABLE             CASES       MISSING    % MISSING
 68 Q15A1               14             9         39.1
 69 Q15A2               12            11         47.8
 70 Q15A3                3            20         87.0
 71 Q15A4                7            16         69.6
 72 Q15B1               16             7         30.4
 73 Q15B2               18             5         21.7
 74 Q15B3                5            18         78.3
 75 Q15B4                9            14         60.9
 76 Q15C1               14             9         39.1
 77 Q15C2               12            11         47.8
 78 Q15C3                2            21         91.3
 79 Q15C4                8            15         65.2
 80 Q15D1               20             3         13.0
 81 Q15D2               23             0          0.0
 82 Q15D3                5            18         78.3
 83 Q15D4                7            16         69.6
 84 Q15E1               17             6         26.1
 85 Q15E2               15             8         34.8
 86 Q15E3                4            19         82.6
 87 Q15E4               11            12         52.2

                                                          STD ERROR      COEFF OF
VARIABLE              MEAN      STD.DEV.      VARIANCE      OF MEAN     VARIATION
 68 Q15A1          7.14286       1.87523       3.51648     0.501176       26.2532
 69 Q15A2          7.08333       1.16450       1.35606     0.336162       16.4400
 70 Q15A3          7.33333       1.15470       1.33333     0.666667       15.7459
 71 Q15A4          6.57143       1.51186       2.28571     0.571429       23.0065
 72 Q15B1          7.25000       1.43759       2.06667     0.359398       19.8288
 73 Q15B2          7.61111       1.14475       1.31046     0.269821       15.0405
 74 Q15B3          7.00000       1.73205       3.00000     0.774597       24.7436
 75 Q15B4          7.11111       1.53659       2.36111     0.512197       21.6083
 76 Q15C1          6.92857       1.59153       2.53297     0.425354       22.9705
 77 Q15C2          7.75000      0.753778      0.568182     0.217597       9.72617
 78 Q15C3          7.50000      0.707107      0.500000     0.500000       9.42809
 79 Q15C4          7.37500       1.18773       1.41071     0.419928       16.1049
 80 Q15D1          7.40000       1.81804       3.30526     0.406526       24.5681
 81 Q15D2          7.43478       1.94997       3.80237     0.406596       26.2276
 82 Q15D3          4.80000       2.86356       8.20000      1.28062       59.6576
 83 Q15D4          7.00000       2.94392       8.66667      1.11270       42.0560
 84 Q15E1          7.41176       2.18114       4.75735     0.529003       29.4280
 85 Q15E2          7.60000       1.88225       3.54286     0.485994       24.7664
 86 Q15E3          7.75000      0.500000      0.250000     0.250000       6.45161
 87 Q15E4          8.27273       1.00905       1.01818     0.304240       12.1973
```

```
COMMAND: DESC

VARIABLE              MINIMUM        MAXIMUM          RANGE          TOTAL
 68 Q15A1             4.00000        10.0000        6.00000        100.000
 69 Q15A2             5.00000        9.00000        4.00000        85.0000
 70 Q15A3             6.00000        8.00000        2.00000        22.0000
 71 Q15A4             4.00000        8.00000        4.00000        46.0000
 72 Q15B1             4.00000        9.00000        5.00000        116.000
 73 Q15B2             5.00000        9.00000        4.00000        137.000
 74 Q15B3             4.00000        8.00000        4.00000        35.0000
 75 Q15B4             5.00000        9.00000        4.00000        64.0000
 76 Q15C1             3.00000        9.00000        6.00000        97.0000
 77 Q15C2             7.00000        9.00000        2.00000        93.0000
 78 Q15C3             7.00000        8.00000        1.00000        15.0000
 79 Q15C4             5.00000        9.00000        4.00000        59.0000
 80 Q15D1             3.00000        10.0000        7.00000        148.000
 81 Q15D2             2.00000        10.0000        8.00000        171.000
 82 Q15D3             1.00000        9.00000        8.00000        24.0000
 83 Q15D4             1.00000        10.0000        9.00000        49.0000
 84 Q15E1             2.00000        10.0000        8.00000        126.000
 85 Q15E2             2.00000        10.0000        8.00000        114.000
 86 Q15E3             7.00000        8.00000        1.00000        31.0000
 87 Q15E4             6.00000        10.0000        4.00000        91.0000
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4       =      90.0000 THRU       100.000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

23 CASES ( 40.4%) ARE IN THIS SUBSET

22 CASES ( 95.7%) ARE VALID

                                                           STD ERROR      COEFF OF
VARIABLE                 MEAN      STD.DEV.     VARIANCE      OF MEAN     VARIATION
 88 Q16               8.13636       1.42413      2.02814     0.303625       17.5032


VARIABLE              MINIMUM       MAXIMUM        RANGE        TOTAL
 88 Q16               4.00000       10.0000      6.00000      179.000
```

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4        =       90.0000 THRU       100.000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 89 Q17

                         CUM                 CUM
      VALUE    FREQ   FREQ       %          %         Z SCORE
     1.00000      7      7    31.8       31.8        -1.26277
     2.00000     13     20    59.1       90.9        0.371403
     3.00000      2     22     9.1      100.0         2.00558
      TOTAL      22     22   100.0      100.0


VARIABLE: 90 Q18A

                         CUM                 CUM
      VALUE    FREQ   FREQ       %          %         Z SCORE
     1.00000      5      5    25.0       25.0        -1.68819
     2.00000     15     20    75.0      100.0        0.562731
      TOTAL      20     20   100.0      100.0


VARIABLE: 91 Q18B

                         CUM                 CUM
      VALUE    FREQ   FREQ       %          %         Z SCORE
     1.00000      2      2    50.0       50.0       -0.866025
     2.00000      2      4    50.0      100.0        0.866025
      TOTAL       4      4   100.0      100.0
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4      =      90.0000 THRU       100.000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

23 CASES ( 40.4%) ARE IN THIS SUBSET

                    VALID       NUMBER
VARIABLE            CASES      MISSING    % MISSING
 92 Q20A               23            0          0.0
 93 Q20B               22            1          4.3
 94 Q20C               23            0          0.0

                                                       STD ERROR     COEFF OF
VARIABLE             MEAN     STD.DEV.     VARIANCE      OF MEAN    VARIATION
 92 Q20A          7.65217      1.89757      3.60079     0.395672      24.7979
 93 Q20B          8.18182      1.09702      1.20346     0.233886      13.4081
 94 Q20C          8.30435      1.42812      2.03953     0.297784      17.1973


VARIABLE          MINIMUM      MAXIMUM        RANGE        TOTAL
 92 Q20A          3.00000      10.0000      7.00000      176.000
 93 Q20B          6.00000      9.00000      3.00000      180.000
 94 Q20C          5.00000      10.0000      5.00000      191.000
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4       =      90.0000 THRU       100.000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

23 CASES ( 40.4%) ARE IN THIS SUBSET

                        VALID        NUMBER
VARIABLE                CASES       MISSING     % MISSING
 95 Q20D1                  20             3          13.0
 96 Q20D2                  23             0           0.0
 97 Q20D3                  22             1           4.3

                                                             STD ERROR      COEFF OF
VARIABLE                 MEAN      STD.DEV.      VARIANCE      OF MEAN     VARIATION
 95 Q20D1             5.34350       22.0848       487.739      4.93831       413.302
 96 Q20D2            0.914783       1.26559       1.60172     0.263894       138.349
 97 Q20D3             4.86500       3.62728       13.1571     0.773338       74.5586


VARIABLE              MINIMUM       MAXIMUM         RANGE        TOTAL
 95 Q20D1           0.0300000       99.0000       98.9700      106.870
 96 Q20D2            0.120000       6.00000       5.88000      21.0400
 97 Q20D3           0.0300000       12.0000       11.9700      107.030
```

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4        =       90.0000 THRU       100.000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 98 Q20E

                        CUM                CUM
       VALUE    FREQ   FREQ        %         %          Z SCORE
      1.00000     20     20     87.0      87.0        -0.378785
      2.00000      3     23     13.0     100.0          2.52523
       TOTAL      23     23    100.0     100.0


VARIABLE: 99 Q20F

                        CUM                CUM
       VALUE    FREQ   FREQ        %         %          Z SCORE
      1.00000     19     19     86.4      86.4        -0.388224
      2.00000      3     22     13.6     100.0          2.45875
       TOTAL      22     22    100.0     100.0


VARIABLE: 100 Q21A

                        CUM                CUM
       VALUE    FREQ   FREQ        %         %          Z SCORE
      1.00000     13     13     56.5      56.5        -0.857780
      2.00000     10     23     43.5     100.0          1.11511
       TOTAL      23     23    100.0     100.0
```

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4       =       90.0000 THRU       100.000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 101 Q22A

                         CUM                CUM
       VALUE     FREQ   FREQ        %         %          Z SCORE
     1.00000       11     11     52.4      52.4        -0.930484
     2.00000       10     21     47.6     100.0          1.02353
       TOTAL       21     21    100.0     100.0


VARIABLE: 102 Q22B

                         CUM                CUM
       VALUE     FREQ   FREQ        %         %          Z SCORE
     1.00000       15     15     71.4      71.4        -0.617213
     2.00000        6     21     28.6     100.0          1.54303
       TOTAL       21     21    100.0     100.0


VARIABLE: 103 Q24A

                         CUM                CUM
       VALUE     FREQ   FREQ        %         %          Z SCORE
     1.00000       16     16     76.2      76.2        -0.545545
     2.00000        5     21     23.8     100.0          1.74574
       TOTAL       21     21    100.0     100.0
```

```
COMMAND: DESC


SELECTION ON VAR 21 Q4      =      90.0000 THRU       100.000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

23 CASES ( 40.4%) ARE IN THIS SUBSET

22 CASES ( 95.7%) ARE VALID

                                                          STD ERROR     COEFF OF
VARIABLE             MEAN      STD.DEV.      VARIANCE      OF MEAN     VARIATION
104 Q24B          7.18182       1.40192       1.96537     0.298889       19.5203


VARIABLE          MINIMUM       MAXIMUM         RANGE        TOTAL
104 Q24B          3.00000       9.00000       6.00000      158.000
```

```
COMMAND: FREQ


SELECTION ON VAR 21 Q4        =      90.0000 THRU       100.000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 105 Q26A

                            CUM                 CUM
       VALUE     FREQ   FREQ          %           %          Z SCORE
      1.00000      14     14       66.7        66.7        -0.670696
      3.00000       5     19       23.8        90.5          1.08988
      4.00000       2     21        9.5       100.0          1.97017
       TOTAL       21     21      100.0       100.0
```

AEROSPACE INDUSTRY

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =      3.00000 THRU       3.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 10 Q1D

                        CUM               CUM
      VALUE    FREQ   FREQ        %         %          Z SCORE
     1.00000      5      5     62.5      62.5       -0.724569
     2.00000      3      8     37.5     100.0         1.20761
      TOTAL       8      8    100.0     100.0
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      3.00000 THRU       3.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

8 CASES ( 14.0%) ARE IN THIS SUBSET

8 CASES (100.0%) ARE VALID

                                                            STD ERROR      COEFF OF
VARIABLE                 MEAN      STD.DEV.     VARIANCE      OF MEAN     VARIATION
 11 Q2A               9.00000      1.41421      2.00000      0.500000       15.7135
 12 Q2B               8.25000      2.12132      4.50000      0.750000       25.7130
 13 Q2C1              8.37500      1.40789      1.98214      0.497763       16.8106
 14 Q2C2              7.75000      1.48805      2.21429      0.526104       19.2006
 15 Q2C3              6.50000      2.00000      4.00000      0.707107       30.7692
 16 Q2C4              7.12500      1.95941      3.83929      0.692756       27.5005
 17 Q2D               8.12500      1.24642      1.55357      0.440677       15.3406
 18 Q2E               7.62500      1.40789      1.98214      0.497763       18.4641
 19 Q2F               6.50000      1.30931      1.71429      0.462910       20.1432
 20 Q2G               8.12500      1.95941      3.83929      0.692756       24.1158


VARIABLE              MINIMUM      MAXIMUM        RANGE         TOTAL
  1 Q2A               7.00000      10.0000      3.00000       72.0000
 12 Q2B               4.00000      10.0000      6.00000       66.0000
 13 Q2C1              6.00000      10.0000      4.00000       67.0000
 14 Q2C2              5.00000      10.0000      5.00000       62.0000
 15 Q2C3              2.00000      8.00000      6.00000       52.0000
 16 Q2C4              3.00000      9.00000      6.00000       57.0000
 17 Q2D               7.00000      10.0000      3.00000       65.0000
 18 Q2E               6.00000      10.0000      4.00000       61.0000
 19 Q2F               4.00000      8.00000      4.00000       52.0000
 20 Q2G               5.00000      10.0000      5.00000       65.0000
```

```
COMMAND: FREQ

SELECTION ON VAR  9 COMTYPE =      3.00000 THRU       3.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 11 Q2A

                       CUM               CUM
       VALUE   FREQ   FREQ       %         %          Z SCORE
      7.00000     2      2    25.0      25.0         -1.41421
      8.00000     1      3    12.5      37.5        -0.707107
      10.0000     5      8    62.5     100.0         0.707107
       TOTAL      8      8   100.0     100.0


VARIABLE: 12 Q2B

                       CUM               CUM
       VALUE   FREQ   FREQ       %         %          Z SCORE
      4.00000     1      1    12.5      12.5         -2.00347
      7.00000     2      3    25.0      37.5        -0.589256
      9.00000     2      5    25.0      62.5         0.353553
      10.0000     3      8    37.5     100.0         0.824958
       TOTAL      8      8   100.0     100.0


VARIABLE: 13 Q2C1

                       CUM               CUM
       VALUE   FREQ   FREQ       %         %          Z SCORE
      6.00000     1      1    12.5      12.5         -1.68693
      7.00000     1      2    12.5      25.0        -0.976642
      8.00000     2      4    25.0      50.0        -0.266357
      9.00000     2      6    25.0      75.0         0.443928
      10.0000     2      8    25.0     100.0          1.15421
       TOTAL      8      8   100.0     100.0
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =       3.00000 THRU       3.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 14 Q2C2

                        CUM              CUM
       VALUE    FREQ  FREQ       %         %         Z SCORE
      5.00000      1     1    12.5      12.5        -1.84806
      7.00000      2     3    25.0      37.5       -0.504016
      8.00000      3     6    37.5      75.0        0.168005
      9.00000      1     7    12.5      87.5        0.840027
      10.0000      1     8    12.5     100.0         1.51205
       TOTAL       8     8   100.0     100.0


VARIABLE: 15 Q2C3

                        CUM              CUM
       VALUE    FREQ  FREQ       %         %         Z SCORE
      2.00000      1     1    12.5      12.5        -2.25000
      6.00000      2     3    25.0      37.5       -0.250000
      7.00000      2     5    25.0      62.5        0.250000
      8.00000      3     8    37.5     100.0        0.750000
       TOTAL       8     8   100.0     100.0


VARIABLE: 16 Q2C4

                        CUM              CUM
       VALUE    FREQ  FREQ       %         %         Z SCORE
      3.00000      1     1    12.5      12.5        -2.10523
      6.00000      1     2    12.5      25.0       -0.574153
      7.00000      2     4    25.0      50.0      -0.0637947
      8.00000      2     6    25.0      75.0        0.446563
      9.00000      2     8    25.0     100.0        0.956921
       TOTAL       8     8   100.0     100.0
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =      3.00000 THRU       3.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 17 Q2D

                      CUM              CUM
      VALUE    FREQ  FREQ       %        %          Z SCORE
     7.00000      3     3    37.5     37.5        -0.902583
     8.00000      3     6    37.5     75.0        -0.100287
     10.0000      2     8    25.0    100.0          1.50430
      TOTAL       8     8   100.0    100.0


VARIABLE: 18 Q2E

                      CUM              CUM
      VALUE    FREQ  FREQ       %        %          Z SCORE
     6.00000      2     2    25.0     25.0         -1.15421
     7.00000      2     4    25.0     50.0        -0.443928
     8.00000      2     6    25.0     75.0         0.266357
     9.00000      1     7    12.5     87.5         0.976642
     10.0000      1     8    12.5    100.0          1.68693
      TOTAL       8     8   100.0    100.0
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =      3.00000 THRU       3.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 19 Q2F

                      CUM               CUM
      VALUE    FREQ  FREQ        %        %          Z SCORE
     4.00000      1     1     12.5     12.5         -1.90941
     6.00000      3     4     37.5     50.0        -0.381881
     7.00000      2     6     25.0     75.0         0.381881
     8.00000      2     8     25.0    100.0          1.14564
      TOTAL       8     8    100.0    100.0


VARIABLE: 20 Q2G

                      CUM               CUM
      VALUE    FREQ  FREQ        %        %          Z SCORE
     5.00000      1     1     12.5     12.5         -1.59487
     6.00000      1     2     12.5     25.0         -1.08451
     7.00000      1     3     12.5     37.5        -0.574153
     8.00000      1     4     12.5     50.0       -0.0637947
     9.00000      1     5     12.5     62.5         0.446563
     10.0000      3     8     37.5    100.0         0.956921
      TOTAL       8     8    100.0    100.0
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      3.00000 THRU       3.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

8 CASES ( 14.0%) ARE IN THIS SUBSET

                     VALID       NUMBER
VARIABLE             CASES      MISSING     % MISSING
 21 Q4                   8            0           0.0
 22 Q5                   7            1          12.5
 23 Q5A                  8            0           0.0
 24 Q5B                  7            1          12.5
 25 Q5C                  3            5          62.5

                                                         STD ERROR     COEFF OF
VARIABLE              MEAN     STD.DEV.      VARIANCE      OF MEAN    VARIATION
 21 Q4             55.6250      22.9031       524.554      8.09748      41.1742
 22 Q5             4.71429      4.46148       19.9048      1.68628      94.6374
 23 Q5A            63.3750      28.3042       801.125      10.0070      44.6614
 24 Q5B            37.1429      20.4974       420.143      7.74728      55.1853
 25 Q5C            11.0000      7.93725       63.0000      4.58258      72.1569

VARIABLE           MINIMUM      MAXIMUM         RANGE        TOTAL
 21 Q4             10.0000      90.0000       80.0000      445.000
 22 Q5             1.00000      14.0000       13.0000      33.0000
 23 Q5A            20.0000      100.000       80.0000      507.000
 24 Q5B            10.0000      67.0000       57.0000      260.000
 25 Q5C            5.00000      20.0000       15.0000      33.0000
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =      3.00000 THRU       3.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 23 Q5A

                         CUM                CUM
      VALUE    FREQ   FREQ        %          %           Z SCORE
     20.0000      1      1     12.5       12.5          -1.53246
     25.0000      1      2     12.5       25.0          -1.35581
     60.0000      1      3     12.5       37.5         -0.119240
     67.0000      1      4     12.5       50.0          0.128073
     70.0000      1      5     12.5       62.5          0.234065
     75.0000      1      6     12.5       75.0          0.410717
     90.0000      1      7     12.5       87.5          0.940675
     100.000      1      8     12.5      100.0           1.29398
      TOTAL       8      8    100.0      100.0


VARIABLE: 24 Q5B

                         CUM                CUM
      VALUE    FREQ   FREQ        %          %           Z SCORE
     10.0000      1      1     14.3       14.3          -1.32421
     20.0000      1      2     14.3       28.6         -0.836344
     30.0000      1      3     14.3       42.9         -0.348476
     33.0000      1      4     14.3       57.1         -0.202116
     40.0000      1      5     14.3       71.4          0.139391
     60.0000      1      6     14.3       85.7           1.11512
     67.0000      1      7     14.3      100.0           1.45663
      TOTAL       7      7    100.0      100.0


VARIABLE: 25 Q5C

                         CUM                CUM
      VALUE    FREQ   FREQ        %          %           Z SCORE
     5.00000      1      1     33.3       33.3         -0.755929
     8.00000      1      2     33.3       66.7         -0.377964
     20.0000      1      3     33.3      100.0           1.13389
      TOTAL       3      3    100.0      100.0
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      3.00000 THRU       3.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

8 CASES ( 14.0%) ARE IN THIS SUBSET

                       VALID        NUMBER
VARIABLE               CASES       MISSING     % MISSING
 26 Q6A                    8             0           0.0
 27 Q6B                    7             1          12.5
 28 Q7                     7             1          12.5

                                                          STD ERROR      COEFF OF
VARIABLE                MEAN      STD.DEV.      VARIANCE    OF MEAN     VARIATION
 26 Q6A              10.7500       14.3999       207.357    5.09113       133.953
 27 Q6B              71.4286       47.0562       2214.29    17.7856       65.8787
 28 Q7               122.143       94.2451       8882.14    35.6213       77.1597


VARIABLE             MINIMUM       MAXIMUM         RANGE      TOTAL
 26 Q6A              1.00000       45.0000       44.0000    86.0000
 27 Q6B              20.0000       150.000       130.000    500.000
 28 Q7               30.0000       240.000       210.000    855.000
```

```
ABSTAT 4.07         CRAY CUSTOMER SATISFACTION SURVEY - AEROSPACE INDUSTRY
FILE: ZCR3         REV#206                                APR 30 '87     PAGE 10

COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      3.00000 THRU       3.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

8 CASES ( 14.0%) ARE IN THIS SUBSET

                    VALID        NUMBER
VARIABLE            CASES       MISSING    % MISSING
 29 Q8A                 8             0          0.0
 30 Q8B                 8             0          0.0
 31 Q8C                 8             0          0.0
 32 Q8D                 8             0          0.0
 33 Q9                  5             3         37.5

                                                       STD ERROR      COEFF OF
VARIABLE             MEAN      STD.DEV.     VARIANCE     OF MEAN     VARIATION
 29 Q8A           7.00000       2.56348      6.57143    0.906327       36.6211
 30 Q8B           7.25000       1.16496      1.35714    0.411877       16.0685
 31 Q8C           8.37500       1.59799      2.55357    0.564975       19.0805
 32 Q8D           7.12500       1.72689      2.98214    0.610547       24.2370
 33 Q9            5.60000       3.04959      9.30000     1.36382       54.4570


  RIABLE          MINIMUM       MAXIMUM        RANGE       TOTAL
 29 Q8A           3.00000       9.00000      6.00000     56.0000
 30 Q8B           5.00000       8.00000      3.00000     58.0000
 31 Q8C           5.00000       10.0000      5.00000     67.0000
 32 Q8D           5.00000       10.0000      5.00000     57.0000
 33 Q9            2.00000       9.00000      7.00000     28.0000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =       3.00000 THRU       3.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

8 CASES ( 14.0%) ARE IN THIS SUBSET

                       VALID        NUMBER
VARIABLE               CASES       MISSING     % MISSING
 34 Q10A                   8             0           0.0
 35 Q10B                   5             3          37.5
 36 Q10C                   8             0           0.0
 37 Q10D                   8             0           0.0
 38 Q10E                   8             0           0.0
 39 Q10F                   7             1          12.5

                                                            STD ERROR      COEFF OF
VARIABLE                MEAN      STD.DEV.      VARIANCE      OF MEAN     VARIATION
 34 Q10A             8.75000      0.707107      0.500000     0.250000       8.08122
 35 Q10B             8.20000       1.48324       2.20000     0.663325       18.0883
 36 Q10C             8.25000       1.28174       1.64286     0.453163       15.5362
 37 Q10D             7.00000       2.87849       8.28571      1.01770       41.1213
 38 Q10E             7.75000       1.75255       3.07143     0.619620       22.6135
 39 Q10F             8.00000       1.41421       2.00000     0.534522       17.6777

VARIABLE             MINIMUM       MAXIMUM         RANGE        TOTAL
 34 Q10A             8.00000       10.0000       2.00000      70.0000
 35 Q10B             6.00000       10.0000       4.00000      41.0000
 36 Q10C             6.00000       10.0000       4.00000      66.0000
 37 Q10D             2.00000       10.0000       8.00000      56.0000
 38 Q10E             4.00000       10.0000       6.00000      62.0000
 39 Q10F             5.00000       9.00000       4.00000      56.0000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      3.00000 THRU       3.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

8 CASES ( 14.0%) ARE IN THIS SUBSET

                    VALID        NUMBER
VARIABLE            CASES       MISSING    % MISSING
 40 Q12A1               0             8        100.0
 41 Q12A2               0             8        100.0
 42 Q12A3               0             8        100.0
 43 Q12A4               3             5         62.5
 44 Q12B1               1             7         87.5
 45 Q12B2               1             7         87.5
 46 Q12B3               0             8        100.0
 47 Q12B4               3             5         62.5

                                                         STD ERROR      COEFF OF
VARIABLE             MEAN        STD.DEV.     VARIANCE     OF MEAN     VARIATION
 40 Q12A1          0.00000        0.00000      0.00000     0.00000       0.00000
 41 Q12A2          0.00000        0.00000      0.00000     0.00000       0.00000
 42 Q12A3          0.00000        0.00000      0.00000     0.00000       0.00000
 43 Q12A4          4.00000        5.19615      27.0000     3.00000       129.904
 44 Q12B1          2.00000        0.00000      0.00000     0.00000       0.00000
 45 Q12B2          2.00000        0.00000      0.00000     0.00000       0.00000
 46 Q12B3          0.00000        0.00000      0.00000     0.00000       0.00000
 47 Q12B4          4.00000        5.19615      27.0000     3.00000       129.904

VARIABLE          MINIMUM        MAXIMUM        RANGE        TOTAL
 40 Q12A1        MISSING        MISSING       0.00000     0.00000
 41 Q12A2        MISSING        MISSING       0.00000     0.00000
 42 Q12A3        MISSING        MISSING       0.00000     0.00000
 43 Q12A4         1.00000        10.0000      9.00000     12.0000
 44 Q12B1         2.00000        2.00000      0.00000     2.00000
 45 Q12B2         2.00000        2.00000      0.00000     2.00000
 46 Q12B3        MISSING        MISSING       0.00000     0.00000
 47 Q12B4         1.00000        10.0000      9.00000     12.0000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      3.00000 THRU       3.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

8 CASES ( 14.0%) ARE IN THIS SUBSET

                     VALID       NUMBER
VARIABLE             CASES      MISSING     % MISSING
 48 Q13A1                6            2          25.0
 49 Q13A2                5            3          37.5
 50 Q13A3                0            8         100.0
 51 Q13A4                3            5          62.5
 52 Q13B1                6            2          25.0
 53 Q13B2                5            3          37.5
 54 Q13B3                0            8         100.0
 55 Q13B4                4            4          50.0

                                                          STD ERROR      COEFF OF
VARIABLE              MEAN     STD.DEV.      VARIANCE       OF MEAN     VARIATION
 48 Q13A1          3.33333      2.87518       8.26667       1.17379       86.2554
 49 Q13A2          3.80000      2.94958       8.70000       1.31909       77.6204
 50 Q13A3          0.00000      0.00000       0.00000       0.00000       0.00000
 51 Q13A4          64.6667      99.8816       9976.33       57.6667       154.456
  2 Q13B1          96.1667      70.2294       4932.17       28.6710       73.0288
 53 Q13B2          103.400      75.9789       5772.80       33.9788       73.4806
 54 Q13B3          0.00000      0.00000       0.00000       0.00000       0.00000
 55 Q13B4          121.750      81.5613       6652.25       40.7807       66.9908

VARIABLE           MINIMUM      MAXIMUM         RANGE         TOTAL
 48 Q13A1          1.00000      7.00000       6.00000       20.0000
 49 Q13A2          1.00000      7.00000       6.00000       19.0000
 50 Q13A3        MISSING      MISSING         0.00000       0.00000
 51 Q13A4          7.00000      180.000       173.000       194.000
 52 Q13B1          7.00000      180.000       173.000       577.000
 53 Q13B2          7.00000      180.000       173.000       517.000
 54 Q13B3        MISSING      MISSING         0.00000       0.00000
 55 Q13B4          7.00000      180.000       173.000       487.000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      3.00000 THRU       3.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

8 CASES ( 14.0%) ARE IN THIS SUBSET

                    VALID        NUMBER
VARIABLE            CASES       MISSING    % MISSING
 56 Q14A1               8             0          0.0
 57 Q14A2               7             1         12.5
 58 Q14A3               0             8        100.0
 59 Q14A4               6             2         25.0
 60 Q14B1               7             1         12.5
 61 Q14B2               7             1         12.5
 62 Q14B3               0             8        100.0
 63 Q14B4               6             2         25.0
 64 Q14C1               7             1         12.5
 65 Q14C2               6             2         25.0
 66 Q14C3               0             8        100.0
 67 Q14C4               6             2         25.0

                                                       STD ERROR     COEFF OF
VARIABLE             MEAN      STD.DEV.     VARIANCE     OF MEAN    VARIATION
 56 Q14A1         6.87500       2.23207      4.98214    0.789156      32.4665
 57 Q14A2         7.57143       1.27242      1.61905    0.480929      16.8055
 58 Q14A3         0.00000       0.00000      0.00000     0.00000      0.00000
 59 Q14A4         8.00000       1.89737      3.60000    0.774597      23.7171
 60 Q14B1         8.71429      0.755929     0.571429    0.285714      8.67459
 61 Q14B2         8.57143      0.786796     0.619048    0.297381      9.17928
 62 Q14B3         0.00000       0.00000      0.00000     0.00000      0.00000
 63 Q14B4         8.33333       1.03280      1.06667    0.421637      12.3935
 64 Q14C1         7.71429       2.13809      4.57143    0.808122      27.7160
 65 Q14C2         7.66667       1.36626      1.86667    0.557773      17.8208
 66 Q14C3         0.00000       0.00000      0.00000     0.00000      0.00000
 67 Q14C4         6.50000       2.88097      8.30000     1.17615      44.3226


VARIABLE          MINIMUM       MAXIMUM        RANGE       TOTAL
 56 Q14A1         3.00000       9.00000      6.00000     55.0000
 57 Q14A2         6.00000       9.00000      3.00000     53.0000
 58 Q14A3        MISSING       MISSING       0.00000     0.00000
 59 Q14A4         5.00000       10.0000      5.00000     48.0000
 60 Q14B1         8.00000       10.0000      2.00000     61.0000
 61 Q14B2         8.00000       10.0000      2.00000     60.0000
 62 Q14B3        MISSING       MISSING       0.00000     0.00000
 63 Q14B4         7.00000       10.0000      3.00000     50.0000
 64 Q14C1         3.00000       9.00000      6.00000     54.0000
 65 Q14C2         5.00000       9.00000      4.00000     46.0000
 66 Q14C3        MISSING       MISSING       0.00000     0.00000
 67 Q14C4         3.00000       10.0000      7.00000     39.0000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      3.00000 THRU       3.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

8 CASES ( 14.0%) ARE IN THIS SUBSET

                     VALID       NUMBER
VARIABLE             CASES      MISSING    % MISSING
 68 Q15A1                7            1         12.5
 69 Q15A2                5            3         37.5
 70 Q15A3                0            8        100.0
 71 Q15A4                4            4         50.0
 72 Q15B1                6            2         25.0
 73 Q15B2                7            1         12.5
 74 Q15B3                0            8        100.0
 75 Q15B4                5            3         37.5
 76 Q15C1                5            3         37.5
 77 Q15C2                3            5         62.5
 78 Q15C3                0            8        100.0
 79 Q15C4                4            4         50.0
 80 Q15D1                8            0          0.0
 81 Q15D2                7            1         12.5
 82 Q15D3                0            8        100.0
 83 Q15D4                4            4         50.0
 84 Q15E1                7            1         12.5
 85 Q15E2                5            3         37.5
 86 Q15E3                0            8        100.0
 87 Q15E4                5            3         37.5

                                                          STD ERROR     COEFF OF
VARIABLE                MEAN     STD.DEV.     VARIANCE     OF MEAN     VARIATION
 68 Q15A1            7.28571      1.60357      2.57143    0.606092       22.0097
 69 Q15A2            6.80000      1.30384      1.70000    0.583095       19.1741
 70 Q15A3            0.00000      0.00000      0.00000     0.00000       0.00000
 71 Q15A4            7.25000      1.70783      2.91667    0.853913       23.5562
 72 Q15B1            7.50000      1.22474      1.50000    0.500000       16.3299
 73 Q15B2            7.57143      1.27242      1.61905    0.480929       16.8055
 74 Q15B3            0.00000      0.00000      0.00000     0.00000       0.00000
 75 Q15B4            7.00000      1.41421      2.00000    0.632456       20.2031
 76 Q15C1            7.00000      2.34521      5.50000     1.04881       33.5030
 77 Q15C2            8.00000      1.00000      1.00000    0.577350       12.5000
 78 Q15C3            0.00000      0.00000      0.00000     0.00000       0.00000
 79 Q15C4            7.75000     0.957427     0.916667    0.478714       12.3539
 80 Q15D1            7.25000      2.25198      5.07143    0.796196       31.0618
 81 Q15D2            8.00000      1.63299      2.66667    0.617213       20.4124
 82 Q15D3            0.00000      0.00000      0.00000     0.00000       0.00000
 83 Q15D4            6.25000      2.75379      7.58333     1.37689       44.0606
 84 Q15E1            8.42857      1.13389      1.28571    0.428571       13.4530
 85 Q15E2            8.00000      0.00000      0.00000     0.00000       0.00000
 86 Q15E3            0.00000      0.00000      0.00000     0.00000       0.00000
 87 Q15E4            8.60000      1.34164      1.80000    0.600000       15.6005
```

```
COMMAND: DESC

  RIABLE             MINIMUM       MAXIMUM         RANGE         TOTAL
 68 Q15A1            4.00000       9.00000       5.00000       51.0000
 69 Q15A2            5.00000       8.00000       3.00000       34.0000
 70 Q15A3           MISSING       MISSING        0.00000       0.00000
 71 Q15A4            5.00000       9.00000       4.00000       29.0000
 72 Q15B1            6.00000       9.00000       3.00000       45.0000
 73 Q15B2            5.00000       9.00000       4.00000       53.0000
 74 Q15B3           MISSING       MISSING        0.00000       0.00000
 75 Q15B4            6.00000       9.00000       3.00000       35.0000
 76 Q15C1            3.00000       9.00000       6.00000       35.0000
 77 Q15C2            7.00000       9.00000       2.00000       24.0000
 78 Q15C3           MISSING       MISSING        0.00000       0.00000
 79 Q15C4            7.00000       9.00000       2.00000       31.0000
 80 Q15D1            2.00000       9.00000       7.00000       58.0000
 81 Q15D2            5.00000       10.0000       5.00000       56.0000
 82 Q15D3           MISSING       MISSING        0.00000       0.00000
 83 Q15D4            3.00000       9.00000       6.00000       25.0000
 84 Q15E1            7.00000       10.0000       3.00000       59.0000
 85 Q15E2            8.00000       8.00000       0.00000       40.0000
 86 Q15E3           MISSING       MISSING        0.00000       0.00000
 87 Q15E4            7.00000       10.0000       3.00000       43.0000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      3.00000 THRU       3.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

8 CASES ( 14.0%) ARE IN THIS SUBSET

8 CASES (100.0%) ARE VALID

                                                       STD ERROR     COEFF OF
VARIABLE                MEAN      STD.DEV.     VARIANCE    OF MEAN    VARIATION
 88 Q16               8.00000      1.92725      3.71429   0.681385      24.0906


VARIABLE             MINIMUM      MAXIMUM        RANGE       TOTAL
 88 Q16               5.00000      10.0000      5.00000     64.0000
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =      3.00000 THRU       3.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 89 Q17

                      CUM              CUM
      VALUE    FREQ  FREQ       %        %          Z SCORE
     1.00000      1     1    14.3     14.3         -1.73205
     2.00000      5     6    71.4     85.7          0.00000
     3.00000      1     7    14.3    100.0          1.73205
      TOTAL       7     7   100.0    100.0


VARIABLE: 90 Q18A

                      CUM              CUM
      VALUE    FREQ  FREQ       %        %          Z SCORE
     1.00000      3     3    37.5     37.5         -1.20761
     2.00000      5     8    62.5    100.0         0.724569
      TOTAL       8     8   100.0    100.0


VARIABLE: 91 Q18B

                      CUM              CUM
      VALUE    FREQ  FREQ       %        %          Z SCORE
     2.00000      2     2   100.0    100.0          0.00000
      TOTAL       2     2   100.0    100.0
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      3.00000 THRU       3.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

8 CASES ( 14.0%) ARE IN THIS SUBSET

                      VALID         NUMBER
VARIABLE              CASES        MISSING      % MISSING
 92 Q20A                  8              0            0.0
 93 Q20B                  7              1           12.5
 94 Q20C                  8              0            0.0

                                                             STD ERROR       COEFF OF
VARIABLE               MEAN       STD.DEV.       VARIANCE      OF MEAN      VARIATION
 92 Q20A            8.12500        1.45774        2.12500     0.515388        17.9414
 93 Q20B            7.42857        1.71825        2.95238     0.649437        23.1303
 94 Q20C            8.50000        1.19523        1.42857     0.422577        14.0615


VARIABLE            MINIMUM        MAXIMUM          RANGE        TOTAL
 92 Q20A            6.00000        10.0000        4.00000      65.0000
 93 Q20B            5.00000        9.00000        4.00000      52.0000
 94 Q20C            6.00000        10.0000        4.00000      68.0000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      3.00000 THRU       3.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

8 CASES ( 14.0%) ARE IN THIS SUBSET

                     VALID        NUMBER
VARIABLE             CASES       MISSING     % MISSING
 95 Q20D1                7             1          12.5
 96 Q20D2                8             0           0.0
 97 Q20D3                7             1          12.5

                                                            STD ERROR      COEFF OF
VARIABLE              MEAN      STD.DEV.      VARIANCE       OF MEAN     VARIATION
 95 Q20D1         0.272857      0.364907      0.133157      0.137922       133.736
 96 Q20D2         0.606250      0.379320      0.143884      0.134110       62.5683
 97 Q20D3          6.85714       4.14039       17.1429       1.56492       60.3807


VARIABLE           MINIMUM       MAXIMUM         RANGE         TOTAL
 95 Q20D1        0.0300000       1.00000      0.970000       1.91000
 96 Q20D2         0.100000       1.00000      0.900000       4.85000
 97 Q20D3          3.00000       12.0000       9.00000       48.0000
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =       3.00000 THRU       3.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 98 Q20E

                        CUM               CUM
      VALUE    FREQ   FREQ       %          %        Z SCORE
     1.00000      6      6    75.0       75.0      -0.540062
     2.00000      2      8    25.0      100.0        1.62019
      TOTAL       8      8   100.0      100.0


VARIABLE: 99 Q20F

                        CUM               CUM
      VALUE    FREQ   FREQ       %          %        Z SCORE
     1.00000      7      7    87.5       87.5      -0.353553
     2.00000      1      8    12.5      100.0        2.47487
      TOTAL       8      8   100.0      100.0


VARIABLE: 100 Q21A

                        CUM               CUM
      VALUE    FREQ   FREQ       %          %        Z SCORE
     1.00000      4      4    50.0       50.0      -0.935414
     2.00000      4      8    50.0      100.0       0.935414
      TOTAL       8      8   100.0      100.0
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =      3.00000 THRU       3.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 101 Q22A

                          CUM               CUM
      VALUE    FREQ   FREQ        %         %          Z SCORE
     1.00000      5      5     71.4      71.4        -0.585540
     2.00000      2      7     28.6     100.0          1.46385
      TOTAL       7      7    100.0     100.0


VARIABLE: 102 Q22B

                          CUM               CUM
      VALUE    FREQ   FREQ        %         %          Z SCORE
     1.00000      6      6     75.0      75.0        -0.540062
     2.00000      2      8     25.0     100.0          1.62019
      TOTAL       8      8    100.0     100.0


VARIABLE: 103 Q24A

                          CUM               CUM
      VALUE    FREQ   FREQ        %         %          Z SCORE
     1.00000      7      7    100.0     100.0          0.00000
      TOTAL       7      7    100.0     100.0
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      3.00000 THRU       3.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

8 CASES ( 14.0%) ARE IN THIS SUBSET

7 CASES ( 87.5%) ARE VALID

                                                          STD ERROR     COEFF OF
VARIABLE                MEAN      STD.DEV.      VARIANCE    OF MEAN    VARIATION
104 Q24B             7.85714       1.06904       1.14286   0.404061      13.6060


VARIABLE             MINIMUM       MAXIMUM         RANGE      TOTAL
104 Q24B             7.00000       10.0000       3.00000    55.0000
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =      3.00000 THRU       3.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 105 Q26A

                          CUM                CUM
       VALUE     FREQ   FREQ        %          %          Z SCORE
      1.00000       6      6     75.0       75.0        -0.526212
      3.00000       1      7     12.5       87.5          1.15767
      4.00000       1      8     12.5      100.0          1.99960
       TOTAL        8      8    100.0      100.0
```

PETROLEUM INDUSTRY

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =      1.00000 THRU       1.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 10 Q1D

                      CUM                CUM
       VALUE    FREQ  FREQ       %        %          Z SCORE
      1.00000      7     7    58.3     58.3       -0.809174
      2.00000      5    12    41.7    100.0         1.13284
       TOTAL      12    12   100.0    100.0
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      1.00000 THRU       1.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

12 CASES (100.0%) ARE VALID

                                                       STD ERROR     COEFF OF
VARIABLE             MEAN     STD.DEV.     VARIANCE      OF MEAN    VARIATION
 11 Q2A           8.66667      1.07309      1.15152     0.309773      12.3818
 12 Q2B           8.50000      1.31426      1.72727     0.379393      15.4619
 13 Q2C1          8.16667      1.58592      2.51515     0.457817      19.4195
 14 Q2C2          8.25000      1.54479      2.38636     0.445941      18.7247
 15 Q2C3          7.08333      1.62135      2.62879     0.468045      22.8897
 16 Q2C4          7.75000      1.28806      1.65909     0.371830      16.6201
 17 Q2D           7.83333      1.33712      1.78788     0.385992      17.0696
 18 Q2E           5.83333      2.36771      5.60606     0.683500      40.5894
 19 Q2F           7.58333      1.56428      2.44697     0.451569      20.6279
 20 Q2G           8.33333     0.984732     0.969697     0.284268      11.8168


VARIABLE          MINIMUM      MAXIMUM        RANGE        TOTAL
 11 Q2A           7.00000      10.0000      3.00000      104.000
 12 Q2B           6.00000      10.0000      4.00000      102.000
 13 Q2C1          5.00000      10.0000      5.00000      98.0000
 14 Q2C2          5.00000      10.0000      5.00000      99.0000
 15 Q2C3          5.00000      10.0000      5.00000      85.0000
 16 Q2C4          5.00000      10.0000      5.00000      93.0000
 17 Q2D           5.00000      10.0000      5.00000      94.0000
 18 Q2E           3.00000      10.0000      7.00000      70.0000
 19 Q2F           5.00000      10.0000      5.00000      91.0000
 20 Q2G           7.00000      10.0000      3.00000      100.000
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =        1.00000 THRU        1.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 11 Q2A

                          CUM               CUM
       VALUE    FREQ   FREQ        %          %            Z SCORE
      7.00000      2      2     16.7       16.7           -1.55315
      8.00000      3      5     25.0       41.7          -0.621261
      9.00000      4      9     33.3       75.0           0.310630
      10.0000      3     12     25.0      100.0            1.24252
       TOTAL      12     12    100.0      100.0


VARIABLE: 12 Q2B

                          CUM               CUM
       VALUE    FREQ   FREQ        %          %            Z SCORE
      6.00000      1      1      8.3        8.3           -1.90221
      7.00000      2      3     16.7       25.0           -1.14133
      8.00000      2      5     16.7       41.7          -0.380443
      9.00000      4      9     33.3       75.0           0.380443
      10.0000      3     12     25.0      100.0            1.14133
       TOTAL      12     12    100.0      100.0


VARIABLE: 13 Q2C1

                          CUM               CUM
       VALUE    FREQ   FREQ        %          %            Z SCORE
      5.00000      1      1      8.3        8.3           -1.99673
      6.00000      1      2      8.3       16.7           -1.36619
      7.00000      1      3      8.3       25.0          -0.735639
      8.00000      4      7     33.3       58.3          -0.105091
      9.00000      2      9     16.7       75.0           0.525456
      10.0000      3     12     25.0      100.0            1.15600
       TOTAL      12     12    100.0      100.0
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =      1.00000 THRU       1.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 14 Q2C2

                       CUM                CUM
       VALUE    FREQ  FREQ        %        %          Z SCORE
      5.00000      1     1      8.3      8.3         -2.10385
      6.00000      1     2      8.3     16.7         -1.45651
      7.00000      1     3      8.3     25.0        -0.809174
      8.00000      2     5     16.7     41.7        -0.161835
      9.00000      5    10     41.7     83.3         0.485504
      10.0000      2    12     16.7    100.0          1.13284
       TOTAL      12    12    100.0    100.0


VARIABLE: 15 Q2C3

                       CUM                CUM
       VALUE    FREQ  FREQ        %        %          Z SCORE
      5.00000      3     3     25.0     25.0         -1.28493
      6.00000      1     4      8.3     33.3        -0.668166
      7.00000      3     7     25.0     58.3       -0.0513974
      8.00000      3    10     25.0     83.3         0.565371
      9.00000      1    11      8.3     91.7          1.18214
      10.0000      1    12      8.3    100.0          1.79891
       TOTAL      12    12    100.0    100.0


VARIABLE: 16 Q2C4

                       CUM                CUM
       VALUE    FREQ  FREQ        %        %          Z SCORE
      5.00000      1     1      8.3      8.3         -2.13500
      7.00000      4     5     33.3     41.7        -0.582272
      8.00000      4     9     33.3     75.0         0.194091
      9.00000      2    11     16.7     91.7         0.970454
      10.0000      1    12      8.3    100.0          1.74682
       TOTAL      12    12    100.0    100.0
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =      1.00000 THRU       1.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 17 Q2D

                      CUM                CUM
       VALUE    FREQ  FREQ        %        %           Z SCORE
      5.00000      1     1      8.3      8.3          -2.11899
      7.00000      4     5     33.3     41.7         -0.623232
      8.00000      3     8     25.0     66.7          0.124646
      9.00000      3    11     25.0     91.7          0.872525
      10.0000      1    12      8.3    100.0           1.62040
       TOTAL      12    12    100.0    100.0


VARIABLE: 18 Q2E

                      CUM                CUM
       VALUE    FREQ  FREQ        %        %           Z SCORE
      3.00000      2     2     16.7     16.7          -1.19665
      4.00000      3     5     25.0     41.7         -0.774306
      5.00000      1     6      8.3     50.0         -0.351957
      6.00000      1     7      8.3     58.3         0.0703914
      7.00000      2     9     16.7     75.0          0.492740
      8.00000      1    10      8.3     83.3          0.915089
      9.00000      1    11      8.3     91.7           1.33744
      10.0000      1    12      8.3    100.0           1.75979
       TOTAL      12    12    100.0    100.0
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =      1.00000 THRU       1.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 19 Q2F

                        CUM                CUM
       VALUE    FREQ   FREQ        %         %          Z SCORE
     5.00000       1      1      8.3       8.3         -1.65145
     6.00000       3      4     25.0      33.3         -1.01218
     7.00000       1      5      8.3      41.7        -0.372909
     8.00000       3      8     25.0      66.7         0.266363
     9.00000       3     11     25.0      91.7         0.905635
     10.0000       1     12      8.3     100.0          1.54491
       TOTAL      12     12    100.0     100.0

VARIABLE: 20 Q2G

                        CUM                CUM
       VALUE    FREQ   FREQ        %         %          Z SCORE
     7.00000       2      2     16.7      16.7         -1.35401
     8.00000       6      8     50.0      66.7        -0.338502
     9.00000       2     10     16.7      83.3         0.677003
     10.0000       2     12     16.7     100.0          1.69251
       TOTAL      12     12    100.0     100.0
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      1.00000 THRU       1.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

                       VALID        NUMBER
VARIABLE               CASES       MISSING     % MISSING
 21 Q4                    12             0           0.0
 22 Q5                    11             1           8.3

                                                              STD ERROR      COEFF OF
VARIABLE                MEAN      STD.DEV.      VARIANCE        OF MEAN     VARIATION
 21 Q4               69.4167       24.9088       620.447        7.19054       35.8830
 22 Q5               9.54545       9.00404       81.0727        2.71482       94.3280


VARIABLE             MINIMUM       MAXIMUM         RANGE          TOTAL
 21 Q4               20.0000       100.000       80.0000        833.000
 22 Q5               1.00000       28.0000       27.0000        105.000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =       1.00000 THRU       1.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

10 CASES ( 83.3%) ARE VALID

                                                        STD ERROR     COEFF OF
VARIABLE              MEAN      STD.DEV.      VARIANCE    OF MEAN    VARIATION
 23 Q5A            46.2000      32.8119      1076.62     10.3760      71.0215


VARIABLE           MINIMUM      MAXIMUM         RANGE       TOTAL
 23 Q5A            10.0000      100.000       90.0000     462.000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      1.00000 THRU       1.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

10 CASES ( 83.3%) ARE VALID

                                                       STD ERROR      COEFF OF
VARIABLE                MEAN      STD.DEV.    VARIANCE    OF MEAN     VARIATION
 24 Q5B              54.3000      33.4167     1116.68     10.5673      61.5409

VARIABLE             MINIMUM      MAXIMUM       RANGE       TOTAL
 24 Q5B              10.0000      100.000     90.0000     543.000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =       1.00000 THRU       1.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

4 CASES ( 33.3%) ARE VALID

                                                       STD ERROR     COEFF OF
VARIABLE               MEAN      STD.DEV.     VARIANCE   OF MEAN     VARIATION
 25 Q5C              23.7500      15.7771      248.917   7.88855       66.4299


VARIABLE             MINIMUM      MAXIMUM        RANGE     TOTAL
 25 Q5C              5.00000      40.0000      35.0000   95.0000
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =      1.00000 THRU       1.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 23 Q5A

                      CUM                CUM
       VALUE   FREQ  FREQ        %         %           Z SCORE
      10.0000     2     2     20.0      20.0          -1.10326
      20.0000     2     4     20.0      40.0         -0.798490
      40.0000     1     5     10.0      50.0         -0.188956
      47.0000     1     6     10.0      60.0         0.0243814
      50.0000     1     7     10.0      70.0          0.115812
      75.0000     1     8     10.0      80.0          0.877730
      90.0000     1     9     10.0      90.0           1.33488
      100.000     1    10     10.0     100.0           1.63965
       TOTAL     10    10    100.0     100.0


VARIABLE: 24 Q5B

                      CUM                CUM
       VALUE   FREQ  FREQ        %         %           Z SCORE
      10.0000     1     1     10.0      10.0          -1.32568
      17.0000     1     2     10.0      20.0          -1.11621
      25.0000     1     3     10.0      30.0         -0.876806
      36.0000     1     4     10.0      40.0         -0.547630
      40.0000     1     5     10.0      50.0         -0.427929
      55.0000     1     6     10.0      60.0         0.0209476
      80.0000     1     7     10.0      70.0          0.769076
      90.0000     2     9     20.0      90.0           1.06833
      100.000     1    10     10.0     100.0           1.36758
       TOTAL     10    10    100.0     100.0


VARIABLE: 25 Q5C

                      CUM                CUM
       VALUE   FREQ  FREQ        %         %           Z SCORE
      5.00000     1     1     25.0      25.0          -1.18843
      17.0000     1     2     25.0      50.0         -0.427835
      33.0000     1     3     25.0      75.0          0.586293
      40.0000     1     4     25.0     100.0           1.02997
       TOTAL      4     4    100.0     100.0
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      1.00000 THRU       1.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

                      VALID        NUMBER
VARIABLE              CASES       MISSING     % MISSING
 26 Q6A                  12             0           0.0
 27 Q6B                  12             0           0.0
 28 Q7                   11             1           8.3

                                                           STD ERROR      COEFF OF
VARIABLE               MEAN      STD.DEV.      VARIANCE      OF MEAN     VARIATION
 26 Q6A             6.75000       4.30908       18.5682      1.24392       63.8382
 27 Q6B             61.6667       34.5315       1192.42      9.96838       55.9970
 28 Q7              126.727       131.795       17369.8      39.7376       103.999


VARIABLE            MINIMUM       MAXIMUM         RANGE        TOTAL
 26 Q6A             1.00000       15.0000       14.0000      81.0000
 27 Q6B             5.00000       120.000       115.000      740.000
 28 Q7              20.0000       480.000       460.000      1394.00
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      1.00000 THRU       1.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

                    VALID       NUMBER
VARIABLE            CASES      MISSING    % MISSING
 29 Q8A                12            0          0.0
 30 Q8B                12            0          0.0
 31 Q8C                12            0          0.0
 32 Q8D                12            0          0.0
 33 Q9                 11            1          8.3

                                                       STD ERROR    COEFF OF
VARIABLE             MEAN     STD.DEV.     VARIANCE      OF MEAN   VARIATION
 29 Q8A           7.66667      1.82574      3.33333     0.527046      23.8140
 30 Q8B           6.33333      2.22928      4.96970     0.643538      35.1992
 31 Q8C           8.16667      1.26730      1.60606     0.365839      15.5180
 32 Q8D           7.58333      2.10878      4.44697     0.608753      27.8081
 33 Q9            6.09091      2.54773      6.49091     0.768168      41.8283

  RIABLE          MINIMUM      MAXIMUM        RANGE        TOTAL
 29 Q8A           5.00000      10.0000      5.00000      92.0000
 30 Q8B           2.00000      9.00000      7.00000      76.0000
 31 Q8C           5.00000      10.0000      5.00000      98.0000
 32 Q8D           2.00000      10.0000      8.00000      91.0000
 33 Q9            1.00000      10.0000      9.00000      67.0000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      1.00000 THRU       1.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

                     VALID         NUMBER
VARIABLE             CASES        MISSING     % MISSING
 34 Q10A                12              0           0.0
 35 Q10B                10              2          16.7
 36 Q10C                11              1           8.3
 37 Q10D                11              1           8.3
 38 Q10E                12              0           0.0
 39 Q10F                11              1           8.3

                                                         STD ERROR      COEFF OF
VARIABLE               MEAN       STD.DEV.      VARIANCE       OF MEAN     VARIATION
 34 Q10A            8.50000        1.08711       1.18182      0.313823       12.7896
 35 Q10B            7.20000        1.39841       1.95556      0.442217       19.4224
 36 Q10C            7.09091        2.25630       5.09091      0.680301       31.8197
 37 Q10D            7.27273        1.95402       3.81818      0.589158       26.8677
 38 Q10E            7.66667        1.55700       2.42424      0.449467       20.3087
 39 Q10F            7.90909        1.04447       1.09091      0.314918       13.2059


VARIABLE            MINIMUM        MAXIMUM         RANGE         TOTAL
 34 Q10A            7.00000        10.0000       3.00000       102.000
 35 Q10B            5.00000        10.0000       5.00000       72.0000
 36 Q10C            3.00000        10.0000       7.00000       78.0000
 37 Q10D            3.00000        10.0000       7.00000       80.0000
 38 Q10E            5.00000        10.0000       5.00000       92.0000
 39 Q10F            7.00000        10.0000       3.00000       87.0000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      1.00000 THRU       1.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

                     VALID        NUMBER
VARIABLE             CASES       MISSING    % MISSING
 40 Q12A1                1            11         91.7
 41 Q12A2                0            12        100.0
 42 Q12A3                0            12        100.0
 43 Q12A4                1            11         91.7
 44 Q12B1                2            10         83.3
 45 Q12B2                1            11         91.7
 46 Q12B3                0            12        100.0
 47 Q12B4                1            11         91.7

                                                        STD ERROR     COEFF OF
VARIABLE              MEAN      STD.DEV.     VARIANCE     OF MEAN    VARIATION
 40 Q12A1          1.00000       0.00000      0.00000     0.00000      0.00000
 41 Q12A2          0.00000       0.00000      0.00000     0.00000      0.00000
 42 Q12A3          0.00000       0.00000      0.00000     0.00000      0.00000
 43 Q12A4          1.00000       0.00000      0.00000     0.00000      0.00000
 44 Q12B1          1.00000       0.00000      0.00000     0.00000      0.00000
 45 Q12B2          1.00000       0.00000      0.00000     0.00000      0.00000
 46 Q12B3          0.00000       0.00000      0.00000     0.00000      0.00000
 47 Q12B4          1.00000       0.00000      0.00000     0.00000      0.00000


VARIABLE           MINIMUM       MAXIMUM        RANGE       TOTAL
 40 Q12A1          1.00000       1.00000      0.00000     1.00000
 41 Q12A2         MISSING       MISSING       0.00000     0.00000
 42 Q12A3         MISSING       MISSING       0.00000     0.00000
 43 Q12A4          1.00000       1.00000      0.00000     1.00000
 44 Q12B1          1.00000       1.00000      0.00000     2.00000
 45 Q12B2          1.00000       1.00000      0.00000     1.00000
 46 Q12B3         MISSING       MISSING       0.00000     0.00000
 47 Q12B4          1.00000       1.00000      0.00000     1.00000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =       1.00000 THRU       1.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

                    VALID       NUMBER
VARIABLE            CASES      MISSING    % MISSING
 48 Q13A1               6            6         50.0
 49 Q13A2               6            6         50.0
 50 Q13A3               0           12        100.0
 51 Q13A4               7            5         41.7
 52 Q13B1               6            6         50.0
 53 Q13B2               6            6         50.0
 54 Q13B3               0           12        100.0
 55 Q13B4               4            8         66.7

                                                       STD ERROR     COEFF OF
VARIABLE             MEAN     STD.DEV.     VARIANCE      OF MEAN    VARIATION
 48 Q13A1         11.3333      10.7269      115.067      4.37924      94.6492
 49 Q13A2         4.66667      5.08593      25.8667      2.07632      108.984
 50 Q13A3         0.00000      0.00000      0.00000      0.00000      0.00000
 51 Q13A4         19.0000      32.9949      1088.67      12.4709      173.658
 52 Q13B1         52.5000      59.6012      3552.30      24.3321      113.526
 53 Q13B2         38.0000      36.8402      1357.20      15.0399      96.9479
 54 Q13B3         0.00000      0.00000      0.00000      0.00000      0.00000
 55 Q13B4         4.25000      3.20156      10.2500      1.60078      75.3309


VARIABLE          MINIMUM      MAXIMUM        RANGE        TOTAL
 48 Q13A1         1.00000      30.0000      29.0000      68.0000
 49 Q13A2         1.00000      14.0000      13.0000      28.0000
 50 Q13A3        MISSING      MISSING       0.00000      0.00000
 51 Q13A4         1.00000      90.0000      89.0000      133.000
 52 Q13B1         1.00000      150.000      149.000      315.000
 53 Q13B2         1.00000      90.0000      89.0000      228.000
 54 Q13B3        MISSING      MISSING       0.00000      0.00000
 55 Q13B4         1.00000      7.00000      6.00000      17.0000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      1.00000 THRU       1.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

                    VALID       NUMBER
VARIABLE            CASES      MISSING    % MISSING
 56 Q14A1              11            1          8.3
 57 Q14A2              11            1          8.3
 58 Q14A3               2           10         83.3
 59 Q14A4               8            4         33.3
 60 Q14B1              11            1          8.3
 61 Q14B2              10            2         16.7
 62 Q14B3               1           11         91.7
 63 Q14B4               7            5         41.7
 64 Q14C1              10            2         16.7
 65 Q14C2              10            2         16.7
 66 Q14C3               1           11         91.7
 67 Q14C4               7            5         41.7

                                                          STD ERROR      COEFF OF
VARIABLE             MEAN     STD.DEV.     VARIANCE        OF MEAN     VARIATION
 56 Q14A1         7.00000      2.19089      4.80000       0.660578       31.2984
 57 Q14A2         7.72727      1.42063      2.01818       0.428335       18.3846
 58 Q14A3         9.00000      1.41421      2.00000        1.00000       15.7135
 59 Q14A4         7.75000     0.886405     0.785714       0.313392       11.4375
 60 Q14B1         7.81818      1.40130      1.96364       0.422507       17.9236
 61 Q14B2         7.50000      1.35401      1.83333       0.428174       18.0534
 62 Q14B3         7.00000      0.00000      0.00000        0.00000       0.00000
 63 Q14B4         7.71429     0.755929     0.571429       0.285714       9.79908
 64 Q14C1         6.60000      1.95505      3.82222       0.618241       29.6220
 65 Q14C2         6.90000      1.59513      2.54444       0.504425       23.1178
 66 Q14C3         5.00000      0.00000      0.00000        0.00000       0.00000
 67 Q14C4         7.42857     0.786796     0.619048       0.297381       10.5915

VARIABLE          MINIMUM      MAXIMUM        RANGE          TOTAL
 56 Q14A1         2.00000      10.0000      8.00000        77.0000
 57 Q14A2         5.00000      10.0000      5.00000        85.0000
 58 Q14A3         8.00000      10.0000      2.00000        18.0000
 59 Q14A4         7.00000      9.00000      2.00000        62.0000
 60 Q14B1         5.00000      10.0000      5.00000        86.0000
 61 Q14B2         5.00000      9.00000      4.00000        75.0000
 62 Q14B3         7.00000      7.00000      0.00000        7.00000
 63 Q14B4         7.00000      9.00000      2.00000        54.0000
 64 Q14C1         4.00000      10.0000      6.00000        66.0000
 65 Q14C2         5.00000      9.00000      4.00000        69.0000
 66 Q14C3         5.00000      5.00000      0.00000        5.00000
 67 Q14C4         6.00000      8.00000      2.00000        52.0000
```

```
COMMAND: DESC

SELECTION ON VAR  9 COMTYPE =      1.00000 THRU       1.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

                    VALID        NUMBER
VARIABLE            CASES       MISSING    % MISSING
 68 Q15A1               8             4         33.3
 69 Q15A2               5             7         58.3
 70 Q15A3               0            12        100.0
 71 Q15A4               4             8         66.7
 72 Q15B1               8             4         33.3
 73 Q15B2               8             4         33.3
 74 Q15B3               1            11         91.7
 75 Q15B4               6             6         50.0
 76 Q15C1              10             2         16.7
 77 Q15C2               8             4         33.3
 78 Q15C3               0            12        100.0
 79 Q15C4               7             5         41.7
 80 Q15D1              12             0          0.0
 81 Q15D2              10             2         16.7
 82 Q15D3               2            10         83.3
 83 Q15D4               6             6         50.0
 84 Q15E1              11             1          8.3
 85 Q15E2               7             5         41.7
 86 Q15E3               2            10         83.3
 87 Q15E4               6             6         50.0

                                                           STD ERROR     COEFF OF
VARIABLE             MEAN       STD.DEV.      VARIANCE      OF MEAN     VARIATION
 68 Q15A1         7.37500        1.06066       1.12500     0.375000       14.3818
 69 Q15A2         7.60000        1.81659       3.30000     0.812404       23.9025
 70 Q15A3         0.00000        0.00000       0.00000      0.00000       0.00000
 71 Q15A4         6.75000       0.957427      0.916667     0.478714       14.1841
 72 Q15B1         6.50000        1.19523       1.42857     0.422577       18.3881
 73 Q15B2         7.37500        1.59799       2.55357     0.564975       21.6677
 74 Q15B3         10.0000        0.00000       0.00000      0.00000       0.00000
 75 Q15B4         6.50000        1.04881       1.10000     0.428174       16.1355
 76 Q15C1         7.00000        1.56347       2.44444     0.494413       22.3353
 77 Q15C2         7.25000        1.48805       2.21429     0.526104       20.5248
 78 Q15C3         0.00000        0.00000       0.00000      0.00000       0.00000
 79 Q15C4         6.85714        1.21499       1.47619     0.459221       17.7185
 80 Q15D1         7.66667        1.23091       1.51515     0.355335       16.0554
 81 Q15D2         7.20000        1.75119       3.06667     0.553775       24.3221
 82 Q15D3         7.50000        3.53553       12.5000      2.50000       47.1405
 83 Q15D4         6.83333        1.47196       2.16667     0.600925       21.5409
 84 Q15E1         7.63636        1.02691       1.05455     0.309625       13.4476
 85 Q15E2         7.85714        1.57359       2.47619     0.594762       20.0275
 86 Q15E3         9.00000        1.41421       2.00000      1.00000       15.7135
 87 Q15E4         7.66667       0.516398      0.266667     0.210819       6.73562
```

```
COMMAND: DESC
CO
 RIABLE            MINIMUM        MAXIMUM         RANGE          TOTAL
 68 Q15A1          6.00000        9.00000        3.00000        59.0000
 69 Q15A2          6.00000        10.0000        4.00000        38.0000
 70 Q15A3         MISSING        MISSING         0.00000        0.00000
 71 Q15A4          6.00000        8.00000        2.00000        27.0000
 72 Q15B1          5.00000        8.00000        3.00000        52.0000
 73 Q15B2          5.00000        10.0000        5.00000        59.0000
 74 Q15B3          10.0000        10.0000        0.00000        10.0000
 75 Q15B4          5.00000        8.00000        3.00000        39.0000
 76 Q15C1          5.00000        10.0000        5.00000        70.0000
 77 Q15C2          5.00000        10.0000        5.00000        58.0000
 78 Q15C3         MISSING        MISSING         0.00000        0.00000
 79 Q15C4          5.00000        9.00000        4.00000        48.0000
 80 Q15D1          5.00000        10.0000        5.00000        92.0000
 81 Q15D2          4.00000        10.0000        6.00000        72.0000
 82 Q15D3          5.00000        10.0000        5.00000        15.0000
 83 Q15D4          4.00000        8.00000        4.00000        41.0000
 84 Q15E1          6.00000        10.0000        4.00000        84.0000
 85 Q15E2          5.00000        10.0000        5.00000        55.0000
 86 Q15E3          8.00000        10.0000        2.00000        18.0000
 87 Q15E4          7.00000        8.00000        1.00000        46.0000
```

```
COMMAND: DESC
CO

SELECTION ON VAR  9 COMTYPE =      1.00000 THRU       1.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

11 CASES ( 91.7%) ARE VALID

                                                        STD ERROR     COEFF OF
VARIABLE             MEAN      STD.DEV.      VARIANCE    OF MEAN     VARIATION
 88 Q16            8.36364      1.20605       1.45455    0.363636      14.4201


VARIABLE           MINIMUM      MAXIMUM         RANGE       TOTAL
 88 Q16            6.00000      10.0000       4.00000     92.0000
```

```
COMMAND: FREQ
CO

SELECTION ON VAR  9 COMTYPE =      1.00000 THRU       1.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 89 Q17

                        CUM                CUM
      VALUE    FREQ   FREQ        %          %          Z SCORE
     1.00000      4      4     36.4       36.4         -1.09370
     2.00000      4      8     36.4       72.7         0.109370
     3.00000      3     11     27.3      100.0          1.31244
      TOTAL      11     11    100.0      100.0


VARIABLE: 90 Q18A

                        CUM                CUM
      VALUE    FREQ   FREQ        %          %          Z SCORE
     1.00000      4      4     36.4       36.4         -1.26131
     2.00000      7     11     63.6      100.0         0.720750
      TOTAL      11     11    100.0      100.0


VARIABLE: 91 Q18B

                        CUM                CUM
      VALUE    FREQ   FREQ        %          %          Z SCORE
     1.00000      3      3     75.0       75.0        -0.500000
     2.00000      1      4     25.0      100.0          1.50000
      TOTAL       4      4    100.0      100.0
```

```
COMMAND: DESC
CO

SELECTION ON VAR  9 COMTYPE =      1.00000 THRU       1.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

                        VALID       NUMBER
VARIABLE                CASES      MISSING    % MISSING
 92 Q20A                   12            0          0.0
 93 Q20B                   10            2         16.7
 94 Q20C                   12            0          0.0

                                                             STD ERROR      COEFF OF
VARIABLE                 MEAN     STD.DEV.     VARIANCE        OF MEAN     VARIATION
 92 Q20A              7.33333      2.05971      4.24242       0.594588       28.0870
 93 Q20B              7.50000      2.46080      6.05556       0.778175       32.8107
 94 Q20C              7.08333      2.46644      6.08333       0.712000       34.8203


VARIABLE              MINIMUM      MAXIMUM        RANGE          TOTAL
 92 Q20A              4.00000      10.0000      6.00000        88.0000
 93 Q20B              2.00000      10.0000      8.00000        75.0000
  4 Q20C              1.00000      10.0000      9.00000        85.0000
```

```
COMMAND: DESC
CO

SELECTION ON VAR  9 COMTYPE =      1.00000 THRU       1.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

                     VALID        NUMBER
VARIABLE             CASES       MISSING    % MISSING
 95 Q20D1                8             4         33.3
 96 Q20D2               12             0          0.0
 97 Q20D3               10             2         16.7

                                                        STD ERROR     COEFF OF
VARIABLE              MEAN      STD.DEV.     VARIANCE     OF MEAN    VARIATION
 95 Q20D1          12.4563       34.9691      1222.84     12.3634      280.735
 96 Q20D2         0.810833      0.661149     0.437117    0.190857      81.5394
 97 Q20D3          16.3000       29.4092      864.900     9.30000      180.424


VARIABLE           MINIMUM       MAXIMUM        RANGE       TOTAL
 95 Q20D1        0.0300000       99.0000      98.9700     99.6500
 96 Q20D2        0.0800000       2.00000      1.92000     9.73000
 97 Q20D3          1.00000       99.0000      98.0000     163.000
```

```
COMMAND: FREQ
 CO

SELECTION ON VAR  9 COMTYPE =       1.00000 THRU       1.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 98 Q20E

                         CUM                CUM
      VALUE    FREQ   FREQ       %           %           Z SCORE
     1.00000     10     10    83.3     83.3        -0.428174
     2.00000      2     12    16.7    100.0          2.14087
      TOTAL      12     12   100.0    100.0


VARIABLE: 99 Q20F

                         CUM                CUM
      VALUE    FREQ   FREQ       %           %           Z SCORE
     1.00000     10     10    83.3     83.3        -0.428174
     2.00000      2     12    16.7    100.0          2.14087
      TOTAL      12     12   100.0    100.0


VARIABLE: 100 Q21A

                         CUM                CUM
      VALUE    FREQ   FREQ       %           %           Z SCORE
     1.00000      8      8    66.7     66.7        -0.677003
     2.00000      4     12    33.3    100.0          1.35401
      TOTAL      12     12   100.0    100.0
```

```
COMMAND: FREQ
CO

SELECTION ON VAR  9 COMTYPE =       1.00000 THRU       1.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 101 Q22A

                       CUM              CUM
      VALUE    FREQ   FREQ        %       %        Z SCORE
     1.00000      5      5     50.0    50.0      -0.948683
     2.00000      5     10     50.0   100.0       0.948683
      TOTAL      10     10    100.0   100.0


VARIABLE: 102 Q22B

                       CUM              CUM
      VALUE    FREQ   FREQ        %       %        Z SCORE
     1.00000      6      6     54.5    54.5      -0.870388
     2.00000      5     11     45.5   100.0        1.04447
      TOTAL      11     11    100.0   100.0


VARIABLE: 103 Q24A

                       CUM              CUM
      VALUE    FREQ   FREQ        %       %        Z SCORE
     1.00000      9      9     81.8    81.8      -0.449467
     2.00000      2     11     18.2   100.0        2.02260
      TOTAL      11     11    100.0   100.0
```

```
COMMAND: DESC
CO

SELECTION ON VAR  9 COMTYPE =      1.00000 THRU       1.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

11 CASES ( 91.7%) ARE VALID

                                                     STD ERROR    COEFF OF
VARIABLE             MEAN      STD.DEV.     VARIANCE   OF MEAN    VARIATION
104 Q24B          7.54545      1.29334      1.67273   0.389957      17.1406


VARIABLE          MINIMUM      MAXIMUM        RANGE      TOTAL
104 Q24B          5.00000      9.00000      4.00000    83.0000
```

```
COMMAND: FREQ
CO

SELECTION ON VAR  9 COMTYPE =      1.00000 THRU       1.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 105 Q26A

                      CUM               CUM
      VALUE   FREQ   FREQ       %        %          Z SCORE
     1.00000     8      8    72.7     72.7        -0.554189
     2.00000     1      9     9.1     81.8         0.665027
     3.00000     2     11    18.2    100.0          1.88424
      TOTAL     11     11   100.0    100.0
```

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DIV. / SF

```
COMMAND: FREQ

SELECTION ON VAR  9 COMTYPE =      2.00000 THRU       2.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 10 Q1D

                        CUM                CUM
       VALUE    FREQ   FREQ       %         %          Z SCORE
      1.00000      1      1    12.5      12.5        -2.47487
      2.00000      7      8    87.5     100.0        0.353553
       TOTAL       8      8   100.0     100.0
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      2.00000 THRU       2.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

8 CASES ( 14.0%) ARE IN THIS SUBSET

                      VALID        NUMBER
VARIABLE              CASES       MISSING     % MISSING
 11 Q2A                   8             0           0.0
 12 Q2B                   8             0           0.0
 13 Q2C1                  8             0           0.0
 14 Q2C2                  8             0           0.0
 15 Q2C3                  8             0           0.0
 16 Q2C4                  7             1          12.5
 17 Q2D                   8             0           0.0
 18 Q2E                   8             0           0.0
 19 Q2F                   8             0           0.0
 20 Q2G                   8             0           0.0

                                                             STD ERROR       COEFF OF
VARIABLE               MEAN      STD.DEV.      VARIANCE        OF MEAN      VARIATION
 11 Q2A             8.50000      0.925820      0.857143       0.327327        10.8920
 12 Q2B             8.00000       2.00000       4.00000       0.707107        25.0000
  3 Q2C1            7.62500       1.30247       1.69643       0.460493        17.0816
 14 Q2C2            7.37500       1.50594       2.26786       0.532430        20.4195
 15 Q2C3            6.50000       1.19523       1.42857       0.422577        18.3881
 16 Q2C4            7.71429      0.487950      0.238095       0.184428        6.32528
 17 Q2D             8.00000       1.30931       1.71429       0.462910        16.3663
 18 Q2E             8.37500       1.50594       2.26786       0.532430        17.9814
 19 Q2F             7.62500       1.30247       1.69643       0.460493        17.0816
 20 Q2G             7.75000       1.75255       3.07143       0.619620        22.6135


VARIABLE            MINIMUM       MAXIMUM         RANGE          TOTAL
 11 Q2A             7.00000       10.0000       3.00000        68.0000
 12 Q2B             4.00000       10.0000       6.00000        64.0000
 13 Q2C1            5.00000       9.00000       4.00000        61.0000
 14 Q2C2            6.00000       10.0000       4.00000        59.0000
 15 Q2C3            4.00000       8.00000       4.00000        52.0000
 16 Q2C4            7.00000       8.00000       1.00000        54.0000
 17 Q2D             6.00000       10.0000       4.00000        64.0000
 18 Q2E             6.00000       10.0000       4.00000        67.0000
 19 Q2F             6.00000       10.0000       4.00000        61.0000
 20 Q2G             5.00000       10.0000       5.00000        62.0000
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =      2.00000 THRU       2.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 11 Q2A

                        CUM                 CUM
       VALUE    FREQ   FREQ        %          %          Z SCORE
      7.00000      1      1     12.5       12.5         -1.62019
      8.00000      3      4     37.5       50.0        -0.540062
      9.00000      3      7     37.5       87.5         0.540062
      10.0000      1      8     12.5      100.0          1.62019
       TOTAL       8      8    100.0      100.0


VARIABLE: 12 Q2B

                        CUM                 CUM
       VALUE    FREQ   FREQ        %          %          Z SCORE
      4.00000      1      1     12.5       12.5         -2.00000
      7.00000      2      3     25.0       37.5        -0.500000
      8.00000      1      4     12.5       50.0     7.275958E-12
      9.00000      2      6     25.0       75.0         0.500000
      10.0000      2      8     25.0      100.0          1.00000
       TOTAL       8      8    100.0      100.0


VARIABLE: 13 Q2C1

                        CUM                 CUM
       VALUE    FREQ   FREQ        %          %          Z SCORE
      5.00000      1      1     12.5       12.5         -2.01540
      7.00000      2      3     25.0       37.5        -0.479857
      8.00000      3      6     37.5       75.0         0.287914
      9.00000      2      8     25.0      100.0          1.05569
       TOTAL       8      8    100.0      100.0
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =       2.00000 THRU       2.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 14 Q2C2

                        CUM                CUM
      VALUE    FREQ   FREQ        %          %           Z SCORE
     6.00000      3      3     37.5       37.5         -0.913051
     7.00000      2      5     25.0       62.5         -0.249014
     8.00000      1      6     12.5       75.0          0.415023
     9.00000      1      7     12.5       87.5           1.07906
     10.0000      1      8     12.5      100.0           1.74310
      TOTAL       8      8    100.0      100.0


VARIABLE: 15 Q2C3

                        CUM                CUM
      VALUE    FREQ   FREQ        %          %           Z SCORE
     4.00000      1      1     12.5       12.5          -2.09165
     6.00000      2      3     25.0       37.5         -0.418330
     7.00000      4      7     50.0       87.5          0.418330
     8.00000      1      8     12.5      100.0           1.25499
      TOTAL       8      8    100.0      100.0


VARIABLE: 16 Q2C4

                        CUM                CUM
      VALUE    FREQ   FREQ        %          %           Z SCORE
     7.00000      2      2     28.6       28.6          -1.46385
     8.00000      5      7     71.4      100.0          0.585540
      TOTAL       7      7    100.0      100.0
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =      2.00000 THRU       2.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 17 Q2D

                       CUM              CUM
       VALUE    FREQ   FREQ        %       %           Z SCORE
      6.00000      1      1     12.5    12.5          -1.52753
      7.00000      2      3     25.0    37.5         -0.763763
      8.00000      2      5     25.0    62.5           0.00000
      9.00000      2      7     25.0    87.5          0.763763
      10.0000      1      8     12.5   100.0           1.52753
       TOTAL       8      8    100.0   100.0


VARIABLE: 18 Q2E

                       CUM              CUM
       VALUE    FREQ   FREQ        %       %           Z SCORE
      6.00000      1      1     12.5    12.5          -1.57709
      7.00000      1      2     12.5    25.0         -0.913051
      8.00000      3      5     37.5    62.5         -0.249014
      10.0000      3      8     37.5   100.0           1.07906
       TOTAL       8      8    100.0   100.0
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =      2.00000 THRU       2.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 19 Q2F

                       CUM                CUM
      VALUE    FREQ   FREQ       %          %           Z SCORE
     6.00000      2      2    25.0       25.0          -1.24763
     7.00000      1      3    12.5       37.5         -0.479857
     8.00000      4      7    50.0       87.5          0.287914
     10.0000      1      8    12.5      100.0           1.82346
      TOTAL       8      8   100.0      100.0


VARIABLE: 20 Q2G

                       CUM                CUM
      VALUE    FREQ   FREQ       %          %           Z SCORE
     5.00000      1      1    12.5       12.5          -1.56914
     6.00000      1      2    12.5       25.0         -0.998545
     7.00000      2      4    25.0       50.0         -0.427948
     9.00000      3      7    37.5       87.5          0.713247
     10.0000      1      8    12.5      100.0           1.28384
      TOTAL       8      8   100.0      100.0
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      2.00000 THRU       2.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

8 CASES ( 14.0%) ARE IN THIS SUBSET

                    VALID       NUMBER
VARIABLE            CASES      MISSING     % MISSING
 21 Q4                  8            0           0.0
 22 Q5                  7            1          12.5
 23 Q5A                 7            1          12.5
 24 Q5B                 7            1          12.5
 25 Q5C                 2            6          75.0

                                                       STD ERROR     COEFF OF
VARIABLE             MEAN     STD.DEV.     VARIANCE      OF MEAN    VARIATION
 21 Q4            73.7500      21.5058      462.500      7.60345      29.1604
 22 Q5            9.00000      6.13732      37.6667      2.31969      68.1924
 23 Q5A           44.1429      17.9854      323.476      6.79786      40.7437
 24 Q5B           53.4286      19.1386      366.286      7.23371      35.8209
 25 Q5C           8.50000      2.12132      4.50000      1.50000      24.9567

  RIABLE          MINIMUM      MAXIMUM        RANGE        TOTAL
 21 Q4            40.0000      100.000      60.0000      590.000
 22 Q5            3.00000      19.0000      16.0000      63.0000
 23 Q5A           20.0000      75.0000      55.0000      309.000
 24 Q5B           18.0000      80.0000      62.0000      374.000
 25 Q5C           7.00000      10.0000      3.00000      17.0000
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =       2.00000 THRU       2.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 23 Q5A

                       CUM               CUM
        VALUE    FREQ  FREQ        %       %          Z SCORE
       20.0000      1     1     14.3    14.3         -1.34236
       30.0000      1     2     14.3    28.6        -0.786350
       34.0000      1     3     14.3    42.9        -0.563948
       50.0000      3     6     42.9    85.7         0.325660
       75.0000      1     7     14.3   100.0          1.71567
        TOTAL       7     7    100.0   100.0


VARIABLE: 24 Q5B

                       CUM               CUM
        VALUE    FREQ  FREQ        %       %          Z SCORE
       18.0000      1     1     14.3    14.3         -1.85116
       50.0000      3     4     42.9    57.1        -0.179144
       60.0000      1     5     14.3    71.4         0.343360
       66.0000      1     6     14.3    85.7         0.656863
       80.0000      1     7     14.3   100.0          1.38837
        TOTAL       7     7    100.0   100.0


VARIABLE: 25 Q5C

                       CUM               CUM
        VALUE    FREQ  FREQ        %       %          Z SCORE
       7.00000      1     1     50.0    50.0        -0.707107
       10.0000      1     2     50.0   100.0         0.707107
        TOTAL       2     2    100.0   100.0
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      2.00000 THRU       2.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

8 CASES ( 14.0%) ARE IN THIS SUBSET

                      VALID        NUMBER
VARIABLE              CASES       MISSING    % MISSING
 26 Q6A                   7             1         12.5
 27 Q6B                   7             1         12.5
 28 Q7                    6             2         25.0

                                                              STD ERROR      COEFF OF
VARIABLE               MEAN      STD.DEV.      VARIANCE         OF MEAN     VARIATION
 26 Q6A             5.57143       4.42934       19.6190         1.67413       79.5010
 27 Q6B             62.8571       34.0168       1157.14         12.8571       54.1176
 28 Q7              145.000       79.1833       6270.00         32.3265       54.6092


VARIABLE            MINIMUM       MAXIMUM         RANGE           TOTAL
 26 Q6A             1.00000       15.0000       14.0000         39.0000
 27 Q6B             20.0000       120.000       100.000         440.000
  8 Q7              60.0000       240.000       180.000         870.000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      2.00000 THRU       2.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

8 CASES ( 14.0%) ARE IN THIS SUBSET

                      VALID        NUMBER
VARIABLE              CASES        MISSING     % MISSING
 29 Q8A                   8              0           0.0
 30 Q8B                   8              0           0.0
 31 Q8C                   7              1          12.5
 32 Q8D                   7              1          12.5
 33 Q9                    6              2          25.0

                                                           STD ERROR      COEFF OF
VARIABLE                MEAN       STD.DEV.       VARIANCE       OF MEAN      VARIATION
 29 Q8A              6.62500        2.44584        5.98214      0.864736        36.9184
 30 Q8B              6.12500        2.35660        5.55357      0.833185        38.4751
 31 Q8C              9.14286       0.899735       0.809524      0.340068        9.84086
 32 Q8D              6.71429        3.03942        9.23810       1.14879        45.2680
 33 Q9               6.16667        2.85774        8.16667       1.16667        46.3417


  RIABLE             MINIMUM        MAXIMUM          RANGE         TOTAL
 29 Q8A              2.00000        9.00000        7.00000       53.0000
 30 Q8B              3.00000        10.0000        7.00000       49.0000
 31 Q8C              8.00000        10.0000        2.00000       64.0000
 32 Q8D              2.00000        10.0000        8.00000       47.0000
 33 Q9               1.00000        9.00000        8.00000       37.0000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      2.00000 THRU       2.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

8 CASES ( 14.0%) ARE IN THIS SUBSET

                      VALID        NUMBER
VARIABLE              CASES       MISSING      % MISSING
 34 Q10A                  7             1           12.5
 35 Q10B                  5             3           37.5
 36 Q10C                  8             0            0.0
 37 Q10D                  6             2           25.0
 38 Q10E                  7             1           12.5
 39 Q10F                  7             1           12.5

                                                          STD ERROR      COEFF OF
VARIABLE               MEAN      STD.DEV.      VARIANCE     OF MEAN     VARIATION
 34 Q10A            9.14286      0.899735      0.809524    0.340068       9.84086
 35 Q10B            7.00000       2.73861       7.50000     1.22474       39.1230
 36 Q10C            7.62500       2.06588       4.26786    0.730399       27.0935
 37 Q10D            5.83333       2.92689       8.56667     1.19490       50.1752
 38 Q10E            8.00000       1.91485       3.66667    0.723747       23.9357
 39 Q10F            8.14286       1.46385       2.14286    0.553283       17.9771

VARIABLE            MINIMUM       MAXIMUM         RANGE       TOTAL
 34 Q10A            8.00000       10.0000       2.00000     64.0000
 35 Q10B            3.00000       10.0000       7.00000     35.0000
 36 Q10C            3.00000       10.0000       7.00000     61.0000
 37 Q10D            2.00000       9.00000       7.00000     35.0000
 38 Q10E            6.00000       10.0000       4.00000     56.0000
 39 Q10F            6.00000       10.0000       4.00000     57.0000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      2.00000 THRU       2.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

8 CASES ( 14.0%) ARE IN THIS SUBSET

                     VALID       NUMBER
VARIABLE             CASES      MISSING    % MISSING
 40 Q12A1                0            8       100.0
 41 Q12A2                1            7        87.5
 42 Q12A3                2            6        75.0
 43 Q12A4                2            6        75.0
 44 Q12B1                2            6        75.0
 45 Q12B2                1            7        87.5
 46 Q12B3                2            6        75.0
 47 Q12B4                2            6        75.0

                                                       STD ERROR     COEFF OF
VARIABLE              MEAN      STD.DEV.    VARIANCE     OF MEAN    VARIATION
 40 Q12A1          0.00000       0.00000     0.00000     0.00000      0.00000
 41 Q12A2          99.0000       0.00000     0.00000     0.00000      0.00000
 42 Q12A3          99.0000       0.00000     0.00000     0.00000      0.00000
 43 Q12A4          51.0000       67.8823     4608.00     48.0000      133.102
 44 Q12B1          1.00000       0.00000     0.00000     0.00000      0.00000
 45 Q12B2          99.0000       0.00000     0.00000     0.00000      0.00000
 46 Q12B3          99.0000       0.00000     0.00000     0.00000      0.00000
 47 Q12B4          51.0000       67.8823     4608.00     48.0000      133.102

VARIABLE           MINIMUM       MAXIMUM       RANGE       TOTAL
 40 Q12A1         MISSING       MISSING      0.00000     0.00000
 41 Q12A2          99.0000       99.0000     0.00000     99.0000
 42 Q12A3          99.0000       99.0000     0.00000     198.000
 43 Q12A4          3.00000       99.0000     96.0000     102.000
 44 Q12B1          1.00000       1.00000     0.00000     2.00000
 45 Q12B2          99.0000       99.0000     0.00000     99.0000
 46 Q12B3          99.0000       99.0000     0.00000     198.000
 47 Q12B4          3.00000       99.0000     96.0000     102.000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      2.00000 THRU       2.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

8 CASES ( 14.0%) ARE IN THIS SUBSET

                      VALID        NUMBER
VARIABLE              CASES       MISSING     % MISSING
 48 Q13A1                 3             5          62.5
 49 Q13A2                 3             5          62.5
 50 Q13A3                 2             6          75.0
 51 Q13A4                 2             6          75.0
 52 Q13B1                 4             4          50.0
 53 Q13B2                 3             5          62.5
 54 Q13B3                 2             6          75.0
 55 Q13B4                 2             6          75.0

                                                          STD ERROR      COEFF OF
VARIABLE               MEAN      STD.DEV.      VARIANCE     OF MEAN     VARIATION
 48 Q13A1           3.33333       1.52753       2.33333    0.881917       45.8258
 49 Q13A2           35.3333       55.1574       3042.33     31.8451       156.106
 50 Q13A3           99.0000       0.00000       0.00000     0.00000       0.00000
 51 Q13A4           50.5000       68.5894       4704.50     48.5000       135.821
 52 Q13B1           17.5000       11.9024       141.667     5.95119       68.0136
 53 Q13B2           46.3333       46.6940       2180.33     26.9588       100.779
 54 Q13B3           99.0000       0.00000       0.00000     0.00000       0.00000
 55 Q13B4           54.5000       62.9325       3960.50     44.5000       115.472

VARIABLE            MINIMUM       MAXIMUM         RANGE       TOTAL
 48 Q13A1           2.00000       5.00000       3.00000     10.0000
 49 Q13A2           2.00000       99.0000       97.0000     106.000
 50 Q13A3           99.0000       99.0000       0.00000     198.000
 51 Q13A4           2.00000       99.0000       97.0000     101.000
 52 Q13B1           5.00000       30.0000       25.0000     70.0000
 53 Q13B2           10.0000       99.0000       89.0000     139.000
 54 Q13B3           99.0000       99.0000       0.00000     198.000
 55 Q13B4           10.0000       99.0000       89.0000     109.000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =        2.00000 THRU        2.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

8 CASES ( 14.0%) ARE IN THIS SUBSET

                        VALID        NUMBER
VARIABLE                CASES        MISSING     % MISSING
 56 Q14A1                   8              0           0.0
 57 Q14A2                   7              1          12.5
 58 Q14A3                   2              6          75.0
 59 Q14A4                   5              3          37.5
 60 Q14B1                   5              3          37.5
 61 Q14B2                   5              3          37.5
 62 Q14B3                   2              6          75.0
 63 Q14B4                   2              6          75.0
 64 Q14C1                   5              3          37.5
 65 Q14C2                   5              3          37.5
 66 Q14C3                   1              7          87.5
 67 Q14C4                   2              6          75.0


                                                               STD ERROR       COEFF OF
VARIABLE                 MEAN      STD.DEV.      VARIANCE       OF MEAN       VARIATION
 56 Q14A1             6.50000       2.00000       4.00000      0.707107         30.7692
 57 Q14A2             7.71429       1.70434       2.90476      0.644179         22.0932
 58 Q14A3             9.50000      0.707107      0.500000      0.500000         7.44323
 59 Q14A4             7.00000       2.54951       6.50000       1.14018         36.4216
 60 Q14B1             7.40000       1.81659       3.30000      0.812404         24.5485
 61 Q14B2             8.40000       1.51658       2.30000      0.678233         18.0545
 62 Q14B3             10.0000       0.00000       0.00000       0.00000         0.00000
 63 Q14B4             6.50000       4.94975       24.5000       3.50000         76.1500
 64 Q14C1             6.00000       2.00000       4.00000      0.894427         33.3333
 65 Q14C2             6.40000       2.88097       8.30000       1.28841         45.0152
 66 Q14C3             10.0000       0.00000       0.00000       0.00000         0.00000
 67 Q14C4             7.50000       3.53553       12.5000       2.50000         47.1405


VARIABLE              MINIMUM       MAXIMUM         RANGE         TOTAL
 56 Q14A1             2.00000       8.00000       6.00000       52.0000
 57 Q14A2             5.00000       10.0000       5.00000       54.0000
 58 Q14A3             9.00000       10.0000       1.00000       19.0000
 59 Q14A4             4.00000       10.0000       6.00000       35.0000
 60 Q14B1             5.00000       10.0000       5.00000       37.0000
 61 Q14B2             7.00000       10.0000       3.00000       42.0000
 62 Q14B3             10.0000       10.0000       0.00000       20.0000
 63 Q14B4             3.00000       10.0000       7.00000       13.0000
 64 Q14C1             4.00000       9.00000       5.00000       30.0000
 65 Q14C2             3.00000       10.0000       7.00000       32.0000
 66 Q14C3             10.0000       10.0000       0.00000       10.0000
 67 Q14C4             5.00000       10.0000       5.00000       15.0000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      2.00000 THRU       2.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

8 CASES ( 14.0%) ARE IN THIS SUBSET

                    VALID        NUMBER
VARIABLE            CASES       MISSING    % MISSING
 68 Q15A1               6             2         25.0
 69 Q15A2               5             3         37.5
 70 Q15A3               1             7         87.5
 71 Q15A4               3             5         62.5
 72 Q15B1               5             3         37.5
 73 Q15B2               4             4         50.0
 74 Q15B3               1             7         87.5
 75 Q15B4               2             6         75.0
 76 Q15C1               5             3         37.5
 77 Q15C2               5             3         37.5
 78 Q15C3               1             7         87.5
 79 Q15C4               3             5         62.5
 80 Q15D1               7             1         12.5
 81 Q15D2               7             1         12.5
 82 Q15D3               1             7         87.5
 83 Q15D4               4             4         50.0
 84 Q15E1               3             5         62.5
 85 Q15E2               3             5         62.5
 86 Q15E3               1             7         87.5
 87 Q15E4               1             7         87.5

                                                          STD ERROR      COEFF OF
VARIABLE                MEAN      STD.DEV.     VARIANCE     OF MEAN     VARIATION
 68 Q15A1            7.33333       2.65832      7.06667     1.08525       36.2498
 69 Q15A2            8.20000       1.64317      2.70000    0.734847       20.0386
 70 Q15A3            8.00000       0.00000      0.00000     0.00000       0.00000
 71 Q15A4            7.00000       1.73205      3.00000     1.00000       24.7436
 72 Q15B1            5.80000       3.27109      10.7000     1.46287       56.3980
 73 Q15B2            7.25000       1.25831      1.58333    0.629153       17.3559
 74 Q15B3            9.00000       0.00000      0.00000     0.00000       0.00000
 75 Q15B4            8.00000       1.41421      2.00000     1.00000       17.6777
 76 Q15C1            8.40000       1.51658      2.30000    0.678233       18.0545
 77 Q15C2            8.40000      0.547723     0.300000    0.244949       6.52051
 78 Q15C3            9.00000       0.00000      0.00000     0.00000       0.00000
 79 Q15C4            6.66667       3.21455      10.3333     1.85592       48.2183
 80 Q15D1            8.85714       1.21499      1.47619    0.459221       13.7176
 81 Q15D2            8.85714       1.21499      1.47619    0.459221       13.7176
 82 Q15D3            10.0000       0.00000      0.00000     0.00000       0.00000
 83 Q15D4            7.00000       2.94392      8.66667     1.47196       42.0560
 84 Q15E1            6.66667       4.16333      17.3333     2.40370       62.4500
 85 Q15E2            6.66667       4.16333      17.3333     2.40370       62.4500
 86 Q15E3            10.0000       0.00000      0.00000     0.00000       0.00000
 87 Q15E4            10.0000       0.00000      0.00000     0.00000       0.00000
```

```
COMMAND: DESC

 ARIABLE              MINIMUM       MAXIMUM          RANGE          TOTAL
 68 Q15A1             4.00000       10.0000        6.00000        44.0000
 69 Q15A2             6.00000       10.0000        4.00000        41.0000
 70 Q15A3             8.00000       8.00000        0.00000        8.00000
 71 Q15A4             5.00000       8.00000        3.00000        21.0000
 72 Q15B1             1.00000       9.00000        8.00000        29.0000
 73 Q15B2             6.00000       9.00000        3.00000        29.0000
 74 Q15B3             9.00000       9.00000        0.00000        9.00000
 75 Q15B4             7.00000       9.00000        2.00000        16.0000
 76 Q15C1             6.00000       10.0000        4.00000        42.0000
 77 Q15C2             8.00000       9.00000        1.00000        42.0000
 78 Q15C3             9.00000       9.00000        0.00000        9.00000
 79 Q15C4             3.00000       9.00000        6.00000        20.0000
 80 Q15D1             7.00000       10.0000        3.00000        62.0000
 81 Q15D2             7.00000       10.0000        3.00000        62.0000
 82 Q15D3             10.0000       10.0000        0.00000        10.0000
 83 Q15D4             3.00000       10.0000        7.00000        28.0000
 84 Q15E1             2.00000       10.0000        8.00000        20.0000
 85 Q15E2             2.00000       10.0000        8.00000        20.0000
 86 Q15E3             10.0000       10.0000        0.00000        10.0000
 87 Q15E4             10.0000       10.0000        0.00000        10.0000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      2.00000 THRU       2.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

8 CASES ( 14.0%) ARE IN THIS SUBSET

8 CASES (100.0%) ARE VALID

                                                           STD ERROR     COEFF OF
VARIABLE                 MEAN      STD.DEV.     VARIANCE     OF MEAN    VARIATION
 88 Q16               7.12500       2.41646      5.83929    0.854348      33.9152


VARIABLE              MINIMUM       MAXIMUM        RANGE       TOTAL
 88 Q16               3.00000       10.0000      7.00000     57.0000
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =      2.00000 THRU       2.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 89 Q17

                       CUM              CUM
       VALUE   FREQ   FREQ       %        %         Z SCORE
      1.00000     2      2    33.3     33.3        -1.10702
      2.00000     3      5    50.0     83.3        0.221404
      3.00000     1      6    16.7    100.0         1.54983
       TOTAL      6      6   100.0    100.0


VARIABLE: 90 Q18A

                       CUM              CUM
       VALUE   FREQ   FREQ       %        %         Z SCORE
      1.00000     4      4    50.0     50.0       -0.935414
      2.00000     4      8    50.0    100.0        0.935414
       TOTAL      8      8   100.0    100.0


VARIABLE: 91 Q18B

                       CUM              CUM
       VALUE   FREQ   FREQ       %        %         Z SCORE
      1.00000     3      3    75.0     75.0       -0.500000
      2.00000     1      4    25.0    100.0         1.50000
       TOTAL      4      4   100.0    100.0
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =       2.00000 THRU       2.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

8 CASES ( 14.0%) ARE IN THIS SUBSET

                        VALID       NUMBER
VARIABLE                CASES      MISSING     % MISSING
 92 Q20A                    8            0           0.0
 93 Q20B                    7            1          12.5
 94 Q20C                    8            0           0.0

                                                           STD ERROR       COEFF OF
VARIABLE                 MEAN     STD.DEV.      VARIANCE     OF MEAN      VARIATION
 92 Q20A              7.37500      1.84681       3.41071    0.652947        25.0415
 93 Q20B              7.42857      1.51186       2.28571    0.571429        20.3519
 94 Q20C              8.75000      1.03510       1.07143    0.365963        11.8297


VARIABLE              MINIMUM      MAXIMUM         RANGE       TOTAL
 92 Q20A              3.00000      9.00000       6.00000     59.0000
 93 Q20B              5.00000      9.00000       4.00000     52.0000
 94 Q20C              7.00000      10.0000       3.00000     70.0000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      2.00000 THRU       2.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

8 CASES ( 14.0%) ARE IN THIS SUBSET

                     VALID      NUMBER
VARIABLE             CASES     MISSING    % MISSING
 95 Q20D1                6           2         25.0
 96 Q20D2                8           0          0.0
 97 Q20D3                8           0          0.0

                                                      STD ERROR     COEFF OF
VARIABLE              MEAN    STD.DEV.     VARIANCE     OF MEAN    VARIATION
 95 Q20D1          16.9383     40.2090      1616.76     16.4153      237.385
 96 Q20D2         0.487500    0.339905     0.115536    0.120175      69.7242
 97 Q20D3          4.12500     3.48210      12.1250     1.23111      84.4145


VARIABLE           MINIMUM     MAXIMUM        RANGE       TOTAL
 95 Q20D1        0.0300000     99.0000      98.9700     101.630
 96 Q20D2         0.150000     1.00000     0.850000     3.90000
 97 Q20D3          1.00000     12.0000      11.0000     33.0000
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =      2.00000 THRU       2.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 98 Q20E

                          CUM                 CUM
       VALUE     FREQ   FREQ        %          %          Z SCORE
      1.00000       8      8    100.0      100.0          0.00000
       TOTAL        8      8    100.0      100.0


VARIABLE: 99 Q20F

                          CUM                 CUM
       VALUE     FREQ   FREQ        %          %          Z SCORE
      1.00000       5      5     71.4       71.4        -0.585540
      2.00000       2      7     28.6      100.0          1.46385
       TOTAL        7      7    100.0      100.0


VARIABLE: 100 Q21A

                          CUM                 CUM
       VALUE     FREQ   FREQ        %          %          Z SCORE
      1.00000       5      5     62.5       62.5        -0.724569
      2.00000       3      8     37.5      100.0          1.20761
       TOTAL        8      8    100.0      100.0
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =      2.00000 THRU       2.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 101 Q22A

                     CUM              CUM
       VALUE   FREQ  FREQ      %        %           Z SCORE
     1.00000      4     4   80.0     80.0         -0.447214
     2.00000      1     5   20.0    100.0           1.78885
       TOTAL      5     5  100.0    100.0


VARIABLE: 102 Q22B

                     CUM              CUM
       VALUE   FREQ  FREQ      %        %           Z SCORE
     1.00000      5     5   62.5     62.5         -0.724569
     2.00000      3     8   37.5    100.0           1.20761
       TOTAL      8     8  100.0    100.0


VARIABLE: 103 Q24A

                     CUM              CUM
       VALUE   FREQ  FREQ      %        %           Z SCORE
     1.00000      6     6   85.7     85.7         -0.377964
     2.00000      1     7   14.3    100.0           2.26779
       TOTAL      7     7  100.0    100.0
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =       2.00000 THRU       2.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

8 CASES ( 14.0%) ARE IN THIS SUBSET

8 CASES (100.0%) ARE VALID

                                                            STD ERROR     COEFF OF
VARIABLE                MEAN      STD.DEV.      VARIANCE     OF MEAN     VARIATION
104 Q24B             6.87500       2.16712       4.69643    0.766194       31.5218


VARIABLE             MINIMUM       MAXIMUM         RANGE       TOTAL
104 Q24B             3.00000       9.00000       6.00000     55.0000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      2.00000 THRU       2.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

8 CASES ( 14.0%) ARE IN THIS SUBSET

8 CASES (100.0%) ARE VALID

                                                           STD ERROR     COEFF OF
VARIABLE                MEAN       STD.DEV.      VARIANCE    OF MEAN     VARIATION
104 Q24B             6.87500        2.16712       4.69643   0.766194       31.5218


VARIABLE             MINIMUM        MAXIMUM         RANGE       TOTAL
104 Q24B             3.00000        9.00000       6.00000     55.0000
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =      2.00000 THRU       2.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 105 Q26A

                          CUM                 CUM
       VALUE     FREQ   FREQ         %          %          Z SCORE
      1.00000       7      7      87.5       87.5        -0.353553
      3.00000       1      8      12.5      100.0          2.47487
       TOTAL        8      8     100.0      100.0
```

OTHER INDUSTRY

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =      4.00000 THRU       4.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 10 Q1D

                        CUM               CUM
      VALUE    FREQ   FREQ       %          %         Z SCORE
     1.00000      7      7    58.3     58.3       -0.809174
     2.00000      5     12    41.7    100.0         1.13284
      TOTAL      12     12   100.0    100.0
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      4.00000 THRU       4.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

12 CASES (100.0%) ARE VALID

                                                          STD ERROR      COEFF OF
VARIABLE                MEAN      STD.DEV.     VARIANCE     OF MEAN      VARIATION
 11 Q2A              9.08333     0.900337     0.810606     0.259905       9.91196
 12 Q2B              7.91667      2.02073      4.08333     0.583333       25.5250
 13 Q2C1             7.75000      1.60255      2.56818     0.462618       20.6781
 14 Q2C2             8.16667      1.69670      2.87879     0.489795       20.7759
 15 Q2C3             5.08333      2.23437      4.99242     0.645008       43.9549
 16 Q2C4             6.83333      1.85047      3.42424     0.534185       27.0801
 17 Q2D              7.50000      1.44600      2.09091     0.417424       19.2800
 18 Q2E              5.91667      3.52803      12.4470      1.01845       59.6286
 19 Q2F              7.16667      3.01008      9.06061     0.868936       42.0012
 20 Q2G              7.66667      2.53461      6.42424     0.731679       33.0601


VARIABLE             MINIMUM      MAXIMUM        RANGE        TOTAL
 11 Q2A              8.00000      10.0000      2.00000      109.000
 12 Q2B              4.00000      10.0000      6.00000      95.0000
 13 Q2C1             5.00000      10.0000      5.00000      93.0000
 14 Q2C2             5.00000      10.0000      5.00000      98.0000
 15 Q2C3             2.00000      9.00000      7.00000      61.0000
 16 Q2C4             4.00000      10.0000      6.00000      82.0000
 17 Q2D              5.00000      9.00000      4.00000      90.0000
 18 Q2E              1.00000      10.0000      9.00000      71.0000
 19 Q2F              1.00000      10.0000      9.00000      86.0000
 20 Q2G              2.00000      10.0000      8.00000      92.0000
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =      4.00000 THRU       4.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 11 Q2A

                        CUM                CUM
       VALUE    FREQ   FREQ        %         %         Z SCORE
      8.00000      4      4     33.3      33.3        -1.20325
      9.00000      3      7     25.0      58.3      -0.0925580
      10.0000      5     12     41.7     100.0         1.01814
       TOTAL      12     12    100.0     100.0


VARIABLE: 12 Q2B

                        CUM                CUM
       VALUE    FREQ   FREQ        %         %         Z SCORE
      4.00000      1      1      8.3       8.3        -1.93825
      5.00000      1      2      8.3      16.7        -1.44338
      6.00000      1      3      8.3      25.0       -0.948504
      7.00000      1      4      8.3      33.3       -0.453632
      8.00000      2      6     16.7      50.0       0.0412393
      9.00000      3      9     25.0      75.0        0.536111
      10.0000      3     12     25.0     100.0         1.03098
       TOTAL      12     12    100.0     100.0


VARIABLE: 13 Q2C1

                        CUM                CUM
       VALUE    FREQ   FREQ        %         %         Z SCORE
      5.00000      1      1      8.3       8.3        -1.71601
      6.00000      2      3     16.7      25.0        -1.09201
      7.00000      2      5     16.7      41.7       -0.468003
      8.00000      3      8     25.0      66.7        0.156001
      9.00000      2     10     16.7      83.3        0.780005
      10.0000      2     12     16.7     100.0         1.40401
       TOTAL      12     12    100.0     100.0
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =      4.00000 THRU       4.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 14 Q2C2

                       CUM              CUM
       VALUE    FREQ  FREQ       %        %         Z SCORE
      5.00000      1     1     8.3      8.3        -1.86637
      6.00000      2     3    16.7     25.0        -1.27699
      8.00000      3     6    25.0     50.0      -0.0982299
      9.00000      3     9    25.0     75.0        0.491150
      10.0000      3    12    25.0    100.0         1.08053
       TOTAL      12    12   100.0    100.0


VARIABLE: 15 Q2C3

                       CUM              CUM
       VALUE    FREQ  FREQ       %        %         Z SCORE
      2.00000      2     2    16.7     16.7        -1.37995
      3.00000      2     4    16.7     33.3       -0.932402
      5.00000      3     7    25.0     58.3      -0.0372961
      6.00000      1     8     8.3     66.7        0.410257
      7.00000      3    11    25.0     91.7        0.857809
      9.00000      1    12     8.3    100.0         1.75292
       TOTAL      12    12   100.0    100.0


VARIABLE: 16 Q2C4

                       CUM              CUM
       VALUE    FREQ  FREQ       %        %         Z SCORE
      4.00000      1     1     8.3      8.3        -1.53114
      5.00000      2     3    16.7     25.0       -0.990739
      6.00000      3     6    25.0     50.0       -0.450336
      7.00000      2     8    16.7     66.7       0.0900672
      8.00000      1     9     8.3     75.0        0.630470
      9.00000      2    11    16.7     91.7         1.17087
      10.0000      1    12     8.3    100.0         1.71128
       TOTAL      12    12   100.0    100.0
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =      4.00000 THRU       4.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 17 Q2D

                      CUM                 CUM
       VALUE    FREQ  FREQ         %        %          Z SCORE
      5.00000      2     2      16.7     16.7         -1.72891
      6.00000      1     3       8.3     25.0         -1.03735
      7.00000      1     4       8.3     33.3        -0.345782
      8.00000      5     9      41.7     75.0         0.345782
      9.00000      3    12      25.0    100.0          1.03735
       TOTAL      12    12     100.0    100.0


VARIABLE: 18 Q2E

                      CUM                 CUM
       VALUE    FREQ  FREQ         %        %          Z SCORE
      1.00000      1     1       8.3      8.3         -1.39360
      2.00000      2     3      16.7     25.0         -1.11016
      3.00000      2     5      16.7     41.7        -0.826713
      6.00000      1     6       8.3     50.0        0.0236204
      7.00000      1     7       8.3     58.3         0.307065
      8.00000      1     8       8.3     66.7         0.590510
      9.00000      1     9       8.3     75.0         0.873954
      10.0000      3    12      25.0    100.0          1.15740
       TOTAL      12    12     100.0    100.0
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =      4.00000 THRU       4.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 19 Q2F

                        CUM               CUM
      VALUE    FREQ    FREQ       %         %           Z SCORE
     1.00000      1       1     8.3       8.3          -2.04867
     2.00000      1       2     8.3      16.7          -1.71645
     5.00000      1       3     8.3      25.0         -0.719803
     7.00000      2       5    16.7      41.7        -0.0553694
     8.00000      1       6     8.3      50.0          0.276847
     9.00000      4      10    33.3      83.3          0.609064
     10.0000      2      12    16.7     100.0          0.941280
      TOTAL      12      12   100.0     100.0


VARIABLE: 20 Q2G

                        CUM               CUM
      VALUE    FREQ    FREQ       %         %           Z SCORE
     2.00000      1       1     8.3       8.3          -2.23572
     5.00000      1       2     8.3      16.7          -1.05210
     6.00000      2       4    16.7      33.3         -0.657564
     7.00000      1       5     8.3      41.7         -0.263025
     8.00000      1       6     8.3      50.0          0.131513
     9.00000      2       8    16.7      66.7          0.526051
     10.0000      4      12    33.3     100.0          0.920589
      TOTAL      12      12   100.0     100.0
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      4.00000 THRU       4.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

                    VALID        NUMBER
VARIABLE            CASES       MISSING      % MISSING
 21 Q4                 12             0            0.0
 22 Q5                 11             1            8.3
 23 Q5A                10             2           16.7
 24 Q5B                 9             3           25.0
 25 Q5C                 7             5           41.7

                                                           STD ERROR      COEFF OF
VARIABLE             MEAN      STD.DEV.      VARIANCE       OF MEAN      VARIATION
 21 Q4            70.4167       26.4109       697.538       7.62418        37.5067
 22 Q5            6.36364       6.91770       47.8545       2.08576        108.707
 23 Q5A           50.8000       30.1765       910.622       9.54265        59.4026
 24 Q5B           44.1111       29.8473       890.861       9.94910        67.6639
 25 Q5C           42.1429       32.5956       1062.48       12.3200        77.3456


  RIABLE          MINIMUM       MAXIMUM         RANGE         TOTAL
 21 Q4            40.0000       100.000       60.0000       845.000
 22 Q5            1.00000       25.0000       24.0000       70.0000
 23 Q5A           20.0000       100.000       80.0000       508.000
 24 Q5B           5.00000       100.000       95.0000       397.000
 25 Q5C           10.0000       100.000       90.0000       295.000
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =       4.00000 THRU        4.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 23 Q5A

                        CUM                CUM
      VALUE     FREQ   FREQ        %         %           Z SCORE
     20.0000       1      1     10.0      10.0          -1.02066
     25.0000       3      4     30.0      40.0         -0.854969
     33.0000       1      5     10.0      50.0         -0.589863
     50.0000       1      6     10.0      60.0        -0.0265107
     67.0000       1      7     10.0      70.0          0.536841
     68.0000       1      8     10.0      80.0          0.569980
     95.0000       1      9     10.0      90.0           1.46472
     100.000       1     10     10.0     100.0           1.63041
      TOTAL       10     10    100.0     100.0


VARIABLE: 24 Q5B

                        CUM                CUM
      VALUE     FREQ   FREQ        %         %           Z SCORE
     5.00000       1      1     11.1      11.1          -1.31037
     6.00000       1      2     11.1      22.2          -1.27687
     33.0000       2      4     22.2      44.4         -0.372265
     50.0000       3      7     33.3      77.8          0.197301
     70.0000       1      8     11.1      88.9          0.867378
     100.000       1      9     11.1     100.0           1.87249
      TOTAL        9      9    100.0     100.0


VARIABLE: 25 Q5C

                        CUM                CUM
      VALUE     FREQ   FREQ        %         %           Z SCORE
     10.0000       1      1     14.3      14.3         -0.986109
     25.0000       2      3     28.6      42.9         -0.525925
     26.0000       1      4     14.3      57.1         -0.495246
     34.0000       1      5     14.3      71.4         -0.249814
     75.0000       1      6     14.3      85.7           1.00802
     100.000       1      7     14.3     100.0           1.77500
      TOTAL        7      7    100.0     100.0
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      4.00000 THRU       4.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

                    VALID        NUMBER
VARIABLE            CASES       MISSING     % MISSING
 26 Q6A                11             1          8.3
 27 Q6B                10             2         16.7
 28 Q7                 10             2         16.7

                                                         STD ERROR      COEFF OF
VARIABLE             MEAN      STD.DEV.      VARIANCE      OF MEAN     VARIATION
 26 Q6A           10.4545       18.4465       340.273      5.56182       176.445
 27 Q6B           55.9000       22.9804       528.100      7.26705       41.1099
 28 Q7            72.0000       37.2827       1390.00      11.7898       51.7815


VARIABLE          MINIMUM       MAXIMUM         RANGE        TOTAL
 26 Q6A           1.00000       60.0000       59.0000      115.000
 27 Q6B           10.0000       99.0000       89.0000      559.000
 28 Q7            30.0000       120.000       90.0000      720.000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      4.00000 THRU       4.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

                    VALID        NUMBER
VARIABLE            CASES       MISSING    % MISSING
 29 Q8A                12             0          0.0
 30 Q8B                12             0          0.0
 31 Q8C                11             1          8.3
 32 Q8D                11             1          8.3
 33 Q9                  8             4         33.3

                                                         STD ERROR      COEFF OF
VARIABLE             MEAN      STD.DEV.     VARIANCE       OF MEAN     VARIATION
 29 Q8A           8.33333       1.72328      2.96970      0.497468       20.6794
 30 Q8B           7.16667       2.32900      5.42424      0.672324       32.4977
 31 Q8C           9.27273      0.646670     0.418182      0.194978       6.97389
 32 Q8D           8.45455       1.57249      2.47273      0.474124       18.5994
 33 Q9            6.62500       2.38672      5.69643      0.843833       36.0260

  RIABLE          MINIMUM       MAXIMUM        RANGE         TOTAL
 29 Q8A           4.00000       10.0000      6.00000       100.000
 30 Q8B           2.00000       10.0000      8.00000       86.0000
 31 Q8C           8.00000       10.0000      2.00000       102.000
 32 Q8D           5.00000       10.0000      5.00000       93.0000
 33 Q9            3.00000       9.00000      6.00000       53.0000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      4.00000 THRU       4.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

                    VALID       NUMBER
VARIABLE            CASES      MISSING    % MISSING
 34 Q10A                9            3         25.0
 35 Q10B                5            7         58.3
 36 Q10C               10            2         16.7
 37 Q10D                9            3         25.0
 38 Q10E               12            0          0.0
 39 Q10F                9            3         25.0

                                                        STD ERROR      COEFF OF
VARIABLE             MEAN     STD.DEV.      VARIANCE      OF MEAN     VARIATION
 34 Q10A          9.00000      1.11803       1.25000     0.372678       12.4226
 35 Q10B          6.80000      1.30384       1.70000     0.583095       19.1741
 36 Q10C          7.70000      2.11082       4.45556     0.667499       27.4132
 37 Q10D          8.33333      1.93649       3.75000     0.645497       23.2379
 38 Q10E          8.50000     0.797724      0.636364     0.230283       9.38499
 39 Q10F          8.66667      1.11803       1.25000     0.372678       12.9004

VARIABLE          MINIMUM      MAXIMUM         RANGE        TOTAL
 34 Q10A          7.00000      10.0000       3.00000      81.0000
 35 Q10B          5.00000      8.00000       3.00000      34.0000
 36 Q10C          4.00000      10.0000       6.00000      77.0000
 37 Q10D          4.00000      10.0000       6.00000      75.0000
 38 Q10E          7.00000      10.0000       3.00000      102.000
 39 Q10F          7.00000      10.0000       3.00000      78.0000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      4.00000 THRU       4.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

                    VALID       NUMBER
VARIABLE            CASES      MISSING    % MISSING
 40 Q12A1              2           10         83.3
 41 Q12A2              2           10         83.3
 42 Q12A3              1           11         91.7
 43 Q12A4              3            9         75.0
 44 Q12B1              3            9         75.0
 45 Q12B2              4            8         66.7
 46 Q12B3              1           11         91.7
 47 Q12B4              3            9         75.0

                                                        STD ERROR     COEFF OF
VARIABLE             MEAN      STD.DEV.     VARIANCE      OF MEAN    VARIATION
 40 Q12A1         183.000      257.387      66248.0      182.000      140.649
 41 Q12A2         186.000      253.144      64082.0      179.000      136.099
 42 Q12A3         30.0000      0.00000      0.00000      0.00000      0.00000
 43 Q12A4         3.00000      3.46410      12.0000      2.00000      115.470
 44 Q12B1         126.333      206.691      42721.3      119.333      163.608
 45 Q12B2         138.000      158.217      25032.7      79.1086      114.650
 46 Q12B3         90.0000      0.00000      0.00000      0.00000      0.00000
 47 Q12B4         12.6667      15.3080      234.333      8.83805      120.852


VARIABLE          MINIMUM      MAXIMUM        RANGE        TOTAL
 40 Q12A1         1.00000      365.000      364.000      366.000
 41 Q12A2         7.00000      365.000      358.000      372.000
 42 Q12A3         30.0000      30.0000      0.00000      30.0000
 43 Q12A4         1.00000      7.00000      6.00000      9.00000
 44 Q12B1         7.00000      365.000      358.000      379.000
 45 Q12B2         7.00000      365.000      358.000      552.000
 46 Q12B3         90.0000      90.0000      0.00000      90.0000
 47 Q12B4         1.00000      30.0000      29.0000      38.0000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      4.00000 THRU        4.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

                     VALID        NUMBER
VARIABLE             CASES       MISSING     % MISSING
 48 Q13A1                4             8          66.7
 49 Q13A2                5             7          58.3
 50 Q13A3                2            10          83.3
 51 Q13A4                4             8          66.7
 52 Q13B1                7             5          41.7
 53 Q13B2               10             2          16.7
 54 Q13B3                2            10          83.3
 55 Q13B4                6             6          50.0

                                                          STD ERROR      COEFF OF
VARIABLE              MEAN      STD.DEV.      VARIANCE      OF MEAN     VARIATION
 48 Q13A1          95.5000       179.677       32283.7      89.8383       188.143
 49 Q13A2          104.800       150.052       22515.7      67.1054       143.180
 50 Q13A3          18.5000       16.2635       264.500      11.5000       87.9106
 51 Q13A4          11.5000       12.5565       157.667      6.27827       109.187
  2 Q13B1          135.286       160.818       25862.6      60.7837       118.873
 53 Q13B2          140.100       160.002       25600.8      50.5972       114.206
 54 Q13B3          135.000       63.6396       4050.00      45.0000       47.1405
 55 Q13B4          54.5000       69.3477       4809.10      28.3111       127.243


VARIABLE           MINIMUM       MAXIMUM         RANGE        TOTAL
 48 Q13A1          3.00000       365.000       362.000      382.000
 49 Q13A2          2.00000       365.000       363.000      524.000
 50 Q13A3          7.00000       30.0000       23.0000      37.0000
 51 Q13A4          2.00000       30.0000       28.0000      46.0000
 52 Q13B1          2.00000       365.000       363.000      947.000
 53 Q13B2          2.00000       365.000       363.000      1401.00
 54 Q13B3          90.0000       180.000       90.0000      270.000
 55 Q13B4          1.00000       180.000       179.000      327.000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      4.00000 THRU      4.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

                    VALID       NUMBER
VARIABLE            CASES      MISSING    % MISSING
 56 Q14A1              12            0          0.0
 57 Q14A2              12            0          0.0
 58 Q14A3               3            9         75.0
 59 Q14A4               7            5         41.7
 60 Q14B1              10            2         16.7
 61 Q14B2              10            2         16.7
 62 Q14B3               3            9         75.0
 63 Q14B4               7            5         41.7
 64 Q14C1              10            2         16.7
 65 Q14C2              11            1          8.3
 66 Q14C3               3            9         75.0
 67 Q14C4               7            5         41.7

                                                       STD ERROR      COEFF OF
VARIABLE             MEAN      STD.DEV.     VARIANCE     OF MEAN     VARIATION
 56 Q14A1         7.41667       1.83196      3.35606    0.528840       24.7005
 57 Q14A2         7.16667       1.94625      3.78788    0.561833       27.1569
 58 Q14A3         4.00000       2.64575      7.00000     1.52753       66.1438
 59 Q14A4         8.00000      0.816497     0.666667    0.308607       10.2062
 60 Q14B1         6.30000       2.98329      8.90000    0.943398       47.3538
 61 Q14B2         6.60000       2.98887      8.93333    0.945163       45.2859
 62 Q14B3         4.00000       2.64575      7.00000     1.52753       66.1438
 63 Q14B4         8.28571      0.951190     0.904762    0.359516       11.4799
 64 Q14C1         6.50000       2.75882      7.61111    0.872417       42.4434
 65 Q14C2         5.81818       2.99393      8.96364    0.902705       51.4582
 66 Q14C3         3.33333       1.52753      2.33333    0.881917       45.8258
 67 Q14C4         7.85714      0.899735     0.809524    0.340068       11.4512


VARIABLE          MINIMUM       MAXIMUM        RANGE       TOTAL
 56 Q14A1         3.00000       10.0000      7.00000     89.0000
 57 Q14A2         3.00000       10.0000      7.00000     86.0000
 58 Q14A3         2.00000       7.00000      5.00000     12.0000
 59 Q14A4         7.00000       9.00000      2.00000     56.0000
 60 Q14B1         1.00000       10.0000      9.00000     63.0000
 61 Q14B2         1.00000       10.0000      9.00000     66.0000
 62 Q14B3         2.00000       7.00000      5.00000     12.0000
 63 Q14B4         7.00000       10.0000      3.00000     58.0000
 64 Q14C1         1.00000       10.0000      9.00000     65.0000
 65 Q14C2         1.00000       10.0000      9.00000     64.0000
 66 Q14C3         2.00000       5.00000      3.00000     10.0000
 67 Q14C4         7.00000       9.00000      2.00000     55.0000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      4.00000 THRU       4.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

                        VALID       NUMBER
VARIABLE                CASES      MISSING    % MISSING
 68 Q15A1                   6            6         50.0
 69 Q15A2                   4            8         66.7
 70 Q15A3                   1           11         91.7
 71 Q15A4                   4            8         66.7
 72 Q15B1                  12            0          0.0
 73 Q15B2                  11            1          8.3
 74 Q15B3                   3            9         75.0
 75 Q15B4                   6            6         50.0
 76 Q15C1                   8            4         33.3
 77 Q15C2                   8            4         33.3
 78 Q15C3                   4            8         66.7
 79 Q15C4                   5            7         58.3
 80 Q15D1                  11            1          8.3
 81 Q15D2                  11            1          8.3
 82 Q15D3                   2           10         83.3
 83 Q15D4                   5            7         58.3
 84 Q15E1                  10            2         16.7
 85 Q15E2                   8            4         33.3
 86 Q15E3                   2           10         83.3
 87 Q15E4                   7            5         41.7

                                                        STD ERROR      COEFF OF
VARIABLE                 MEAN     STD.DEV.     VARIANCE    OF MEAN     VARIATION
 68 Q15A1             6.83333     0.983192     0.966667   0.401386       14.3882
 69 Q15A2             7.75000      1.25831      1.58333   0.629153       16.2362
 70 Q15A3             8.00000      0.00000      0.00000    0.00000       0.00000
 71 Q15A4             7.75000     0.500000     0.250000   0.250000       6.45161
 72 Q15B1             7.33333     0.887625     0.787879   0.256235       12.1040
 73 Q15B2             8.09091     0.700649     0.490909   0.211254       8.65971
 74 Q15B3             6.66667      2.51661      6.33333    1.45297       37.7492
 75 Q15B4             6.83333      1.47196      2.16667   0.600925       21.5409
 76 Q15C1             7.50000      2.20389      4.85714   0.779194       29.3852
 77 Q15C2             6.12500      3.13676      9.83929    1.10901       51.2125
 78 Q15C3             4.50000      3.31662      11.0000    1.65831       73.7028
 79 Q15C4             7.80000     0.836660     0.700000   0.374166       10.7264
 80 Q15D1             7.54545      1.96792      3.87273   0.593352       26.0809
 81 Q15D2             7.27273      2.45320      6.01818   0.739667       33.7315
 82 Q15D3             7.50000     0.707107     0.500000   0.500000       9.42809
 83 Q15D4             6.00000      3.00000      9.00000    1.34164       50.0000
 84 Q15E1             8.20000      1.68655      2.84444   0.533333       20.5677
  5 Q15E2             7.25000      2.91548      8.50000    1.03078       40.2135
 86 Q15E3             7.50000     0.707107     0.500000   0.500000       9.42809
 87 Q15E4             8.14286      1.06904      1.14286   0.404061       13.1286
```

```
COMMAND: DESC

VARIABLE                MINIMUM         MAXIMUM          RANGE           TOTAL
 68 Q15A1               6.00000         8.00000         2.00000         41.0000
 69 Q15A2               6.00000         9.00000         3.00000         31.0000
 70 Q15A3               8.00000         8.00000         0.00000         8.00000
 71 Q15A4               7.00000         8.00000         1.00000         31.0000
 72 Q15B1               6.00000         9.00000         3.00000         88.0000
 73 Q15B2               7.00000         9.00000         2.00000         89.0000
 74 Q15B3               4.00000         9.00000         5.00000         20.0000
 75 Q15B4               5.00000         9.00000         4.00000         41.0000
 76 Q15C1               3.00000         10.0000         7.00000         60.0000
 77 Q15C2               1.00000         9.00000         8.00000         49.0000
 78 Q15C3               2.00000         9.00000         7.00000         18.0000
 79 Q15C4               7.00000         9.00000         2.00000         39.0000
 80 Q15D1               3.00000         10.0000         7.00000         83.0000
 81 Q15D2               2.00000         10.0000         8.00000         80.0000
 82 Q15D3               7.00000         8.00000         1.00000         15.0000
 83 Q15D4               1.00000         9.00000         8.00000         30.0000
 84 Q15E1               4.00000         10.0000         6.00000         82.0000
 85 Q15E2               1.00000         10.0000         9.00000         58.0000
 86 Q15E3               7.00000         8.00000         1.00000         15.0000
 87 Q15E4               7.00000         10.0000         3.00000         57.0000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      4.00000 THRU       4.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

12 CASES (100.0%) ARE VALID

                                                        STD ERROR     COEFF OF
VARIABLE              MEAN      STD.DEV.     VARIANCE    OF MEAN     VARIATION
 88 Q16            7.83333      1.99241      3.96970    0.575159      25.4350


VARIABLE           MINIMUM      MAXIMUM        RANGE       TOTAL
 88 Q16            3.00000      10.0000      7.00000     94.0000
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =      4.00000 THRU       4.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 89 Q17

                       CUM               CUM
      VALUE   FREQ  FREQ        %          %         Z SCORE
     1.00000     4     4     36.4     36.4        -1.08981
     2.00000     5     9     45.5     81.8        0.242180
     3.00000     2    11     18.2    100.0         1.57417
      TOTAL     11    11    100.0    100.0


VARIABLE: 90 Q18A

                       CUM               CUM
      VALUE   FREQ  FREQ        %          %         Z SCORE
     1.00000     2     2     18.2     18.2        -2.02260
     2.00000     9    11     81.8    100.0        0.449467
      TOTAL     11    11    100.0    100.0


VARIABLE: 91 Q18B

                       CUM               CUM
      VALUE   FREQ  FREQ        %          %         Z SCORE
     1.00000     1     1     50.0     50.0       -0.707107
     2.00000     1     2     50.0    100.0        0.707107
      TOTAL      2     2    100.0    100.0
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      4.00000 THRU       4.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

                      VALID       NUMBER
VARIABLE              CASES      MISSING    % MISSING
 92 Q20A                 12            0          0.0
 93 Q20B                  8            4         33.3
 94 Q20C                 12            0          0.0

                                                          STD ERROR      COEFF OF
VARIABLE               MEAN     STD.DEV.     VARIANCE       OF MEAN     VARIATION
 92 Q20A            7.25000      2.26134      5.11364      0.652791       31.1908
 93 Q20B            8.25000      1.28174      1.64286      0.453163       15.5362
 94 Q20C            8.08333      1.24011      1.53788      0.357990       15.3416


VARIABLE            MINIMUM      MAXIMUM        RANGE         TOTAL
 92 Q20A            4.00000      9.00000      5.00000       87.0000
 93 Q20B            6.00000      10.0000      4.00000       66.0000
 94 Q20C            6.00000      10.0000      4.00000       97.0000
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      4.00000 THRU       4.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

                      VALID         NUMBER
VARIABLE              CASES        MISSING     % MISSING
 95 Q20D1                11              1           8.3
 96 Q20D2                12              0           0.0
 97 Q20D3                10              2          16.7

                                                             STD ERROR      COEFF OF
VARIABLE               MEAN       STD.DEV.      VARIANCE       OF MEAN     VARIATION
 95 Q20D1         0.0590909      0.0670007    0.00448909     0.0202015       113.386
 96 Q20D2           1.22917        1.63852       2.68474      0.472999       133.303
 97 Q20D3           6.60300        3.68186       13.5561       1.16431       55.7604


VARIABLE            MINIMUM        MAXIMUM         RANGE         TOTAL
 95 Q20D1         0.0300000       0.250000      0.220000      0.650000
 96 Q20D2          0.100000        6.00000       5.90000       14.7500
 97 Q20D3         0.0300000        12.0000       11.9700       66.0300
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =       4.00000 THRU        4.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 98 Q20E

                         CUM               CUM
       VALUE    FREQ   FREQ        %         %          Z SCORE
     1.00000      11     11     91.7      91.7        -0.288675
     2.00000       1     12      8.3     100.0          3.17543
       TOTAL      12     12    100.0     100.0


VARIABLE: 99 Q20F

                         CUM               CUM
       VALUE    FREQ   FREQ        %         %          Z SCORE
     1.00000       8      8     72.7      72.7        -0.583874
     2.00000       3     11     27.3     100.0          1.55700
       TOTAL      11     11    100.0     100.0


VARIABLE: 100 Q21A

                         CUM               CUM
       VALUE    FREQ   FREQ        %         %          Z SCORE
     1.00000       7      7     58.3      58.3        -0.809174
     2.00000       5     12     41.7     100.0          1.13284
       TOTAL      12     12    100.0     100.0
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =      4.00000 THRU       4.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 101 Q22A

                        CUM                CUM
       VALUE    FREQ   FREQ        %         %          Z SCORE
      1.00000      6      6     60.0      60.0        -0.774597
      2.00000      4     10     40.0     100.0          1.16190
       TOTAL      10     10    100.0     100.0


VARIABLE: 102 Q22B

                        CUM                CUM
       VALUE    FREQ   FREQ        %         %          Z SCORE
      1.00000     10     10     83.3      83.3        -0.428174
      2.00000      2     12     16.7     100.0          2.14087
       TOTAL      12     12    100.0     100.0


VARIABLE: 103 Q24A

                        CUM                CUM
       VALUE    FREQ   FREQ        %         %          Z SCORE
      1.00000      8      8     72.7      72.7        -0.583874
      2.00000      3     11     27.3     100.0          1.55700
       TOTAL      11     11    100.0     100.0
```

```
COMMAND: DESC


SELECTION ON VAR  9 COMTYPE =      4.00000 THRU       4.00000
MISSING VALUE TREATMENT: VARWISE

THERE ARE 105 VARIABLES AND 57 CASES IN THE DATA SET

12 CASES ( 21.1%) ARE IN THIS SUBSET

11 CASES ( 91.7%) ARE VALID

                                                        STD ERROR     COEFF OF
VARIABLE             MEAN      STD.DEV.      VARIANCE    OF MEAN     VARIATION
104 Q24B          7.00000       1.73205       3.00000   0.522233       24.7436


VARIABLE          MINIMUM       MAXIMUM         RANGE      TOTAL
104 Q24B          3.00000       9.00000       6.00000    77.0000
```

```
COMMAND: FREQ


SELECTION ON VAR  9 COMTYPE =      4.00000 THRU       4.00000
MISSING VALUE TREATMENT: VARWISE


VARIABLE: 105 Q26A

                        CUM                CUM
      VALUE    FREQ   FREQ        %          %        Z SCORE
     1.00000      9      9     75.0       75.0     -0.552771
     3.00000      3     12     25.0      100.0       1.65831
      TOTAL      12     12    100.0      100.0
```

COMMENT LIST

Cray Customer Satisfaction Survey

Cover page: Summary comments

###	C/G	Company	Answer
107	Com	Apple	First UNICOS user. UNICOS = big improvement, reliability wise, over COS.
110	Com	ARCO	
118	Com	AT&T - PN	See interview #117 for comments concerning Bell Labs use of UNICOS.
117	Com	AT&T - PW	Dennis Ritchie, Software Staff, 201-582-3770 Norman Wilson, Software Staff, 201-582-2842 Bell Labs use of UNICOS is addressed in this interview. See interview #118 (Peter Nelson) for comments on COS.
214	Com	Boeing	Jim Rodtter, Data Center Manager, 206-865-5082 Some comments from Howard Wolvington, Manager Data Center, 703-821-6074
122	Com	CDC/SIS	
212	Com	Chev - Geo	
106	Com	Chev. OFR	Much more profit conscious now, more conscious of high cost of Cray systems.
213	Com	duPont	
101	Com	Exxon PRC	Very disappointed regarding hardware and software reliability. Feels CRI mid level (and above) management is not hearing or responding to their concerns. Don't want fast machines unless there more reliastic. CRI is not paying enough attention to their installed base of specific customers. Satisfaction has declined since last year.
102	Com	Exxon USA	
108	Com	Fairchild	
114	Com	Ford	Neil T. St. Charles, Planning & Developing, 313-322-0849 Jerry Meach, Supervisor of Planning & Developing, 313-32-3830
103	Com	GD	
210	Com	GE Air	

Cray Customer Satisfaction Survey

Cover page: Summary comments

```
### C/G Company    Answer
--- --- ---------- ------


113 Com GM
119 Com Grumman    Interviewed John Riordan at request of John Witte.
104 Com Lock. Aero Specific comments by Doug Choy indicated by a (DC)
                   following the comment.
109 Com Lock. M&S  Majority of interview was with Jack Sherman.  All
                   responses are Jack's unless initials of other
                   respondents appear at the end of the comment.
126 Com McDonnell
211 Com Mobil      Pleased with Cray.  Some problems, but overall
                   pleased.
105 Com Omnibus
201 Com Phillips   Very helpful, friendly.  Summed up: 1) Excellent
                   Support, 2) Get out of DASD!
124 Com Rockwell   Abe Levine, Manager of Sci. Computer Center,
                   213-594-2740

                   George Stanton, Supervisor, Operations Systems,
                   213-594-1750

                   Jerry Labate, Supervisor, Operation System,
                   213-594-2724


116 Com Schlumberg
301 Com Scientific Very satisfied with Cray's on-site representative
                   and the local marketing representative.
208 Com Shell Oil  Carl Smith, Supervisor Supercomputer, 713-795-1696

                   Clint Brisco, Project Leader, 713-795-1713

                   They really enjoyed the interview, they think its
                   great.
306 Com Std Oil    -  Unique site, using COS 1.13
                   -  High turnover of local CRAY analysts, local
                   analysts not too    good
                   -  Satisfied overall
                   -  Very straightforward interview!
304 Com Sun Explor Bill Speights, Operations Manager, 214-890-2704

                   Lonnie Lewis, Manager, Scientific Computing
                   Center, 214-890-2704

                   Above 3 persons were referred by Pat Wallington,
                   although 3 persons responded, no one knowledgeable
                   about software performance/issues was available.
                   Rich answered virtually every question.  Others
```

answered question 25, Sun’s PR department requested confidentially of their names, in regards to any publication sent to non-Cray personnel.

Cray Customer Satisfaction Survey

Cover page: Summary comments

###	C/G	Company	Answer
205	Com	Univ Texas	Half the interview with Warlick, half with Smith. The circled questions were answered by Smith.
313	Com	Westing-FP	. Overall, very satisfied . Active in CUG . Weakness: Disk Drives . Good local analysts . Problem: Diagnostics not on-line
303	Com	Westing-RP	Inexperienced local analysts/engineers: marginal contacts with sales representative. Concerned about: compatibility between op. system versions; hit & miss diagnostics; variable support for spare parts.
115	Gov	AFGW	Capt. Alfred Brown, Mainframe Operations
127	Gov	Arnold Eng	
310	Gov	BRL	
207	Gov	DOE - Rich	
203	Gov	GA Tech -	Friendliness to users, both architecture and O.S. = 8.
130	Gov	LLNL	Sam Mendicino, Director, LCC Peter DuBois, Division Leader, Network Operations, 415-422-4007 Bob Borchers answers are from the viewpoint of both LCC and MFE, unless otherwise indicated. S.M., P.D. answers are for LCC. Circled question numbers indicate answers are from S.M., P.D. & Dieter Fuss.
128	Gov	Los Alamos	Charles Slocum, C-8 Group Leader Dennis Bruckway, C-10 Group Leader Tom Trezane, Group Leader of Opus Had a conference call interview.
120	Gov	Mellon Ins	
129	Gov	MFE	Larry Berdahl, Group Leader, 415-422-4217 Emily Yim, Consultant Where answers differ by type of machine, answer for Cray 2 is shown in the space allocated, and answers for non-Cray are shown in the text. Answers from Larry Berdahl and Emily Yim are pages

4-5 indicatated where question number is circled on pages 4-5.

Cray Customer Satisfaction Survey

Cover page: Summary comments

###	C/G	Company	Answer
204	Gov	Minneapoli	
121	Gov	NASA Lewis	Peg Yohner, Chief Computer Services Division, 216-433-5165 Neither Peg (nor Steve Sedeck) were available when Tony was interviewed on-site on 4/18/87. Interviewed Peg by phone on 4/23/87. She expressed willingness to answer some of the questions Tony had not answered earlier. Questions answered by Peg are circled. Peg's comments are shown on page 11.
112	Gov	NASA-Marsh	Dale Robertson, Manager Systems & Software, 205-544-2863 Circled questions on pages 1-8 answered by Dale R. exclusively, on pages 9-10 initials of respondent are shown.
311	Gov	NASA/Am MS	. Very satisfied . Excellent on-site analysts & sales representatives . Not as satisfied with HQ software support, too bureaucratic . Although software problems are not fully resolved, she is satisfied with "workarounds."
308	Gov	NASA/Am RB	
302	Gov	NASA/Am-GL	Previous sales representative was super! Current representative is marginal. Lacking spare parts for disk drives. FORTRAN version 1.15 is unsatisfactory. Wants more detailed training on station. Mr. Lewis said this system is provided through contract with ZERO-ONE, Inc. (Santa Clara)

Cray Customer Satisfaction Survey

Cover page: Summary comments

###	C/G	Company	Answer
123	Gov	NCAR	
206	Gov	NCI - CC	I fedexed a questionnaire to him.
202	Gov	NCI - JM	
307	Gov	NRL - DG	Overall, pretty satisfied user. Concerns: QA on software, esp. Fortran. - Third-party software support, direction of DEC/CRAY relationship, tactical problems stemming from upgrade of X/MP-12 to X/MP-24
111	Gov	Oak Ridge	Ron Todd, Manager of Operations Duane Winkler, DEC/CRAY Systems Section Head, 615-574-5396 Responses are by both C. Allen and R. Todd unless respondent initials are shown. Circled questions on pages 1-8 answered by Ron Todd exclusively. D. Winklers' responses shown with his initials beside the question.
309	Gov	Sandia -CA	- Concerned about CTSS/UNICOS support on CRAY 1/S. - High curnover of local analysts - No support for CTSS - CRAY's "D.O.E. systems group" has helped a bit - Overall, pretty well satisfied - Note: delegated to Hilary by Donna Crawford
125	Gov	Sandia -NM	
131	Gov	Unisys	
209	Gov	Univ. IL	
305	Gov	Wright-Pat	Very satisfied. Local CE's have done a super job and are involved in all aspects of CRAY system maintenance. Limited/no experience with PASCAL.

Cray Customer Satisfaction Survey

Q1: Primary Cray computer on site

###	C/G	Company	Type	Date	O.S.	1=Prod. 2=Res.
107	Com	Apple	XMP/48	4-86	UNICOS 2.0	2
110	Com	ARCO	XMP/28	10/86	COS	1
118	Com	AT&T - PN	XMP/24	12/85	COS 115	2
117	Com	AT&T - PW	XMP/24	12/85	UNICOS 2.0	2
214	Com	Boeing	XMP24		COS	2
122	Com	CDC/SIS	XMP/24	1/87	COS 114	2
212	Com	Chev - Geo	XMP 24	85	COS 1.14 bug 5	2
106	Com	Chev. OFR	XMP 48	5/85	COS 116	2
213	Com	duPont	Cray 1A	2/86	COS 1.14	2
101	Com	Exxon PRC	1S/4400	12.81	COS, 114	2
102	Com	Exxon USA	XMP/14	4-85	COS, 11.5	1
108	Com	Fairchild	1S	10-85	COS 113	1
114	Com	Ford	XMP/11-12-	2/85	COS 115	1
103	Com	GD	XMP/24	9/85	COS 1.1.5	1
210	Com	GE Air	XMP/28	11/86	COS 1.15	2
113	Com	GM	XMP/24	4/86	COS 115	2
119	Com	Grumman	XMP/14	1/87	COS 115	1
104	Com	Lock. Aero	XMP 24	5/85	COS, 115	2
109	Com	Lock. M&S	XMP/24U	2.87	COS VER. 115	1
126	Com	McDonnell	XMP/14	6/86	COS 115	1
211	Com	Mobil	XMP-14	2/86	COS 1.14	1
105	Com	Omnibus	XMP 22	12/83	COS 114	1
201	Com	Phillips	IM/2300	3/84	COS	1
124	Com	Rockwell	XMP/14	6/85	COS 115	1
116	Com	Schlumberg	XMP/12	1/84	CTSS,Baseline 5	1
301	Com	Scientific	1-M/4400	11/86	COS, 1.15	1
208	Com	Shell Oil	XMP 14	10/85	COS 1.14	1
306	Com	Std Oil	XMP -24	06/84	COS 1.13	1
304	Com	Sun Explor	X/MP-14	12/84	COS 1.14	1
205	Com	Univ Texas	XMP24	4/86	COS/1.15	2
313	Com	Westing-FP	1/S-1300	06/81	COS 1.14	1
303	Com	Westing-RP	1/S - 1300	06/81	COS 1.14	1
115	Gov	AFGW	XMP/12	03/85	COS 114	1
127	Gov	Arnold Eng	XMP/12	1/85	COS 115	2
310	Gov	BRL	XMP-48	01/87	COS 1.15	2
207	Gov	DOE - Rich	XMP 12	01/87	UNICOS	2
203	Gov	GA Tech -	XMP48	12/85	CTSS/Baseline 5	2
130	Gov	LLNL	XMP (2)	Multi	CTSS	9
128	Gov	Los Alamos	XMP/48	1/86	CTSS	2
120	Gov	Mellon Ins	XMP/48	5/86	COS 1.15	2

```
Page No.      2
05/05/87
                    Cray Customer Satisfaction Survey
                    ---- -------- ------------ ------

                    Q1:  Primary Cray computer on site


                                                               1=Prod.
### C/G Company    Type       Date  O.S.                        2=Res.
--- --- ---------- ----       ----- ----                       -------



129 Gov MFE        C2/4-256   10/85 CTSS                             2
204 Gov Minneapoli Cray 2     12/85 UNICOS/2.0                       2
121 Gov NASA Lewis XMP/24     2/86  COS 115                          2
112 Gov NASA-Marsh XMP/44     5/86  COS 115                          1
311 Gov NASA/Am MS XMP - 48   02/86 COS 1.16                         2
308 Gov NASA/Am RB CRAY-2     12/85 UNICOS 1.1 Plus                  2
302 Gov NASA/Am-GL XMP-48     3/86  COS 1.16                         2
123 Gov NCAR       XMP/48     12/86 COS 116                          2
206 Gov NCI - CC   XMP 22     4/86  COS/1.15                         2
202 Gov NCI - JM   XMP22      4/86  COS/1.15 bus. 2                  2
307 Gov NRL - DG   XMP-24     03/87 COS, 1.15                        2
111 Gov Oak Ridge  XMP/12     10/85 CTSS                             2
309 Gov Sandia -CA 1/S-2000   XX/81 CTSS/Baseline 6                  2
125 Gov Sandia -NM XMP/416    1/87  CTSS Baseline 5                  2
131 Gov Unisys     1S/2000    5/86  CTSS Baseline 6                  2
209 Gov Univ. IL   XMP-48     11/86 CTSS Baseline 5                  2
305 Gov Wright-Pat X/MP-12    08/85 COS 1.15                         1
```

Cray Customer Satisfaction Survey

Q1: Other Cray computers at site

```
### C/G Company    Answer
--- --- ---------- ------


107 Com Apple
110 Com ARCO
118 Com AT&T - PN
117 Com AT&T - PW
214 Com Boeing     XMP24
122 Com CDC/SIS
212 Com Chev - Geo
106 Com Chev. OFR
213 Com duPont
101 Com Exxon PRC
102 Com Exxon USA
108 Com Fairchild
114 Com Ford
103 Com GD
210 Com GE Air
113 Com GM
119 Com Grumman    1S/1000, 4/86, COS
104 Com Lock. Aero
109 Com Lock. M&S  1S/2000, 11.83 COS, VER. 115 Production(1)
126 Com McDonnell
211 Com Mobil      Cray 1A, 3/87, COS 1.14, 1
105 Com Omnibus
201 Com Phillips
124 Com Rockwell
116 Com Schlumberg
301 Com Scientific
208 Com Shell Oil
306 Com Std Oil
304 Com Sun Explor
205 Com Univ Texas
313 Com Westing-FP 1/S -2000, 06/83, COS 1.14, 1
303 Com Westing-RP 1/S-2300, 01/84, COS 1.14, 1  X/MP-48, 04/86, COS
                   1.15, 2
115 Gov AFGW
127 Gov Arnold Eng
310 Gov BRL
207 Gov DOE - Rich
203 Gov GA Tech -
130 Gov LLNL       1S/1A (6), Multi, CTSS, 9, C2, 10-85, CTSS, 2
128 Gov Los Alamos XMP, Multiple CTSS, 2,  1A/1S (4), Multiple CTSS,
                   2
```

```
                  Cray Customer Satisfaction Survey
                  ---- -------- ------------ ------

                  Q1:  Other Cray computers at site


### C/G Company    Answer
--- --- ---------- ------


120 Gov Mellon Ins
129 Gov MFE        XMP/22, 12-84, CTSS, 2,  1S/1A, Multi, CTSS, 2
204 Gov Minneapoli Cray 2 single, 10/85, UNICOS Research(2)
121 Gov NASA Lewis
112 Gov NASA-Marsh
311 Gov NASA/Am MS
308 Gov NASA/Am RB
302 Gov NASA/Am-GL
123 Gov NCAR       1A, 12/77, COS 116, 2
206 Gov NCI - CC
202 Gov NCI - JM
307 Gov NRL - DG
111 Gov Oak Ridge
309 Gov Sandia -CA 1-S/2000, XX/84, CTSS/Baseline 6, 2
125 Gov Sandia -NM 15/1000, 2/82, CTSS Baseline 5, 2
131 Gov Unisys
209 Gov Univ. IL
305 Gov Wright-Pat
```

```
                  Cray Customer Satisfaction Survey
                  ---- -------- ------------ ------

                Q3:  Other important decision criteria


### C/G Company    Answer
--- --- ---------- ------


107 Com Apple      UNIX availability = 10
                   Fast graphics cabability = 9
                   "C" language performance = 9

110 Com ARCO       Ease of integration into large scale networking,
                   IBM, peripheral environment.
118 Com AT&T - PN  Vendor reputation = 9
                   Delivery data (how soon) = 4
117 Com AT&T - PW  Must support UNIX = 10
                   Networking capabilities = 9
                   Peripheral interfaces = 6
214 Com Boeing
122 Com CDC/SIS
212 Com Chev - Geo Maintenance costs (hardware environment) = 8
106 Com Chev. OFR  Ability to transfer data in and out. = 7

213 Com duPont     Price/performance = 10
101 Com Exxon PRC  Compatibility with IBM hardware/software = 8
                   Engineering work stations = 7
                   Access to tape drives = 10
102 Com Exxon USA  Reliability and speed - most important = 10
108 Com Fairchild  How easy we can go to third-party vendors for
                   interface (e.g. Network systems DEC) = 6

114 Com Ford       Business viability of the vendor = 10
                   Other facilities cost not included in system price
                   (e.g. computer room requirements) = 8
103 Com GD         Hardware/software support = 10
                   Upper management support and sincere interest in
                   their cust. = 10
                   Want to get a true evaluation of their system, not
                   be oversold by sales person = 10
                   Ease of upgrade = 10
210 Com GE Air     Third-party codes = 8
113 Com GM         Will it run the types of application we need (is
                   the number one criteria). = 10
119 Com Grumman    Operating system meets DOD clearance
                   specifications = 6
104 Com Lock. Aero Security features of the OS = 8
                   Networking capabilities = 7
                   Growth path - 7
```

Cray Customer Satisfaction Survey

Q3: Other important decision criteria

###	C/G	Company	Answer
109	Com	Lock. M&S	
126	Com	McDonnell	- System's architecture = 7 - Network access = 9
211	Com	Mobil	Price performance = 8
105	Com	Omnibus	Accessability to OS code (ease of making mods, including vendor cooperation). = 9 Operational costs = 8
201	Com	Phillips	Hardware reliability! Easy front-end interface = 8
124	Com	Rockwell	Hardware maintenance support = 9 Compatibility of operating systems = 9
116	Com	Schlumberg	Process national lab software = 9 Networking capability = 8
301	Com	Scientific	Market acceptance of the CPU = 9
208	Com	Shell Oil	O.S. Software reliability = 9
306	Com	Std Oil	Compatibility with O/S and application s/w = 10
304	Com	Sun Explor	- Migration path = 7 - Affordable upgradeability of hardware = 10 - Tested/debugged application software = 10
205	Com	Univ Texas	
313	Com	Westing-FP	
303	Com	Westing-RP	Availability (up-time) of system = 8 "Buy American" = 5
115	Gov	AFGW	Availability of ANSI FORTRAN = 10
127	Gov	Arnold Eng	
310	Gov	BRL	Networking capability (TCPIP) = 9
207	Gov	DOE - Rich	Compatibility with other sites = 8 Certification for classified processing = 8
203	Gov	GA Tech -	Friendliness to users, both archetucture and O.S. = 8
130	Gov	LLNL	Maintenance quality (MTTR) = 8
128	Gov	Los Alamos	Serviceability of the hardware (ease of fixing) = 8 Robustness of the system software = 7

Cray Customer Satisfaction Survey

Q3: Other important decision criteria

```
### C/G Company     Answer
--- --- ----------- ------


120 Gov Mellon Ins
129 Gov MFE         Availability of hardware = 9
                    Hardware speed, memory size = 10
                    Functionality of the hardware = 10
                    Availability of high performance disks = 9
204 Gov Minneapoli  Price performance - 10
                    Uniqueness compatibility - 10
121 Gov NASA Lewis
112 Gov NASA-Marsh  Ease of getting information in and out of machine
                    = 9

                    Tools to help adapt code to take advantage of
                    parallel processing = 8

                    Performance tools for systems tuning = 8
311 Gov NASA/Am MS  Price/performance ratio = 10
308 Gov NASA/Am RB  Large memory, ease of installation into network
                    environment.  Vendor commitment to open
                    architecture, (UNICOS, Hyper channel, Ethernet)
                    TCP/IP
302 Gov NASA/Am-GL  "Power" = 10
123 Gov NCAR        Financing of the product = 9
                    Architectural balance among system components = 8
206 Gov NCI - CC    Communications interfaces = 9
202 Gov NCI - JM    Ability to upgrade and stay state of the art = 8
307 Gov NRL - DG
111 Gov Oak Ridge   Availability of hardware maintenance = 10
                    Compactness of physical aspects of system = 9
309 Gov Sandia -CA  - Network interface = 8
                    - Network performance = 8
                    - Availability of portable s/w = 7

125 Gov Sandia -NM  Can't be number one off the production line.
                    (Track record of vendor) = 10

131 Gov Unisys      Stability of the vendor = 10
                    Continuously improving product line = 10
209 Gov Univ. IL    Vendor reputation = 8
305 Gov Wright-Pat  Risk of using vendors system = 9
                    System connection to other vendor's hardware = 9
                    Availability of UNIX = 7
```

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                    Cray Customer Satisfaction Survey
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                 Q11:  Systems software currently in use


### C/G Company    Answer
--- --- ---------- ------


107 Com Apple      UNICOS, FORTRAN, C, PASCAL
110 Com ARCO       COS, STATION, FORTRAN
118 Com AT&T - PN  COS, UNICOS, FORTRAN, C
117 Com AT&T - PW  COS, UNICOS, FORTRAN, C
214 Com Boeing     COS, STATION, FORTRAN
122 Com CDC/SIS    COS, STATION, FORTRAN, C
212 Com Chev - Geo COS, STATION, FORTRAN
106 Com Chev. OFR  COS, UNICOS, STATION, FORTRAN
213 Com duPont     COS, STATION, FORTRAN
101 Com Exxon PRC  COS, STATION, FORTRAN
102 Com Exxon USA  COS, STATION
108 Com Fairchild  COS, STATION, PASCAL, FORTRAN, C
114 Com Ford       COS, STATION, FORTRAN
103 Com GD         COS, STATION, FORTRAN
210 Com GE Air     COS, STATION, FORTRAN
113 Com GM         COS, STATION, FORTRAN
119 Com Grumman    COS, STATION, FORTRAN
104 Com Lock. Aero COS, STATION, FORTRAN
109 Com Lock. M&S  COS, STATION, FORTRAN
126 Com McDonnell  COS, STATION, FORTRAN
211 Com Mobil      COS, STATION, FORTRAN
105 Com Omnibus    COS, STATION, FORTRAN
201 Com Phillips   COS, STATION, FORTRAN
124 Com Rockwell   COS, STATION, PASCAL, FORTRAN
116 Com Schlumberg CTSS, FORTRAN
301 Com Scientific COS, STATION, PASCAL, FORTRAN, C
208 Com Shell Oil  COS, STATION, FORTRAN
306 Com Std Oil    COS, FORTRAN, C, TCP/IP
304 Com Sun Explor COS, STATION, FORTRAN
205 Com Univ Texas COS, STATION, PASCAL, FORTRAN
313 Com Westing-FP COS, STATION, FORTRAN
303 Com Westing-RP COS, STATION, PASCAL, FORTRAN, C
115 Gov AFGW       COS, FORTRAN
127 Gov Arnold Eng COS, STATION, PASCAL, FORTRAN
310 Gov BRL        COS, UNICOS, FORTRAN, C, TCP/IP
207 Gov DOE - Rich COS, UNICOS, STATION, FORTRAN
203 Gov GA Tech -  STATION, PASCAL, CTSS, FORTRAN, C
130 Gov LLNL       CTSS, FORTRAN
128 Gov Los Alamos UNICOS, PASCAL, CTSS, FORTRAN, C
120 Gov Mellon Ins COS, STATION, PASCAL, FORTRAN, C
```

Cray Customer Satisfaction Survey

Q11: Systems software currently in use

```
### C/G Company    Answer
--- --- ---------- ------


129 Gov MFE        CTSS, FORTRAN
204 Gov Minneapoli UNICOS, STATION, PASCAL, FORTRAN, C
121 Gov NASA Lewis COS, STATION, FORTRAN
112 Gov NASA-Marsh COS, STATION, PASCAL, FORTRAN
311 Gov NASA/Am MS COS, STATION, PASCAL, FORTRAN, C
308 Gov NASA/Am RB UNICOS, PASCAL, FORTRAN, C, TCP/IP
302 Gov NASA/Am-GL COS, UNICOS, STATION, PASCAL, FORTRAN, C
123 Gov NCAR       COS, STATION, FORTRAN, C
206 Gov NCI - CC   COS, STATION, PASCAL, FORTRAN, C, LISP
202 Gov NCI - JM   COS, VMS, APPOLLO, PASCAL, FORTRAN, C, LISP
307 Gov NRL - DG   COS, STATION, PASCAL, FORTRAN, C
111 Gov Oak Ridge  CTSS, FORTRAN
309 Gov Sandia -CA PASCAL, CTSS, FORTRAN, C
125 Gov Sandia -NM PASCAL, CTSS, FORTRAN, C
131 Gov Unisys     PASCAL, CTSS, FORTRAN, C
209 Gov Univ. IL   STATION, CTSS, FORTRAN
305 Gov Wright-Pat COS, STATION, PASCAL, FORTRAN
```

Cray Customer Satisfaction Survey

Q17: Changes in satisfaction with Cray

###	C/G	Company	1=Improved 2=NoChange 3=Declined	Comments
107	Com	Apple	1	Were able to get HSX channel installed and it works well.
110	Com	ARCO	3	ARCO's general perception is that CRAY sold us the XMP upgrade and vanished. This is unprofessional from the selling side. Our view is that when oil business turns up, sales person will appear. Also, parts availability problem has discouraged us. Over the years CRI has upgraded FE, hardware and software support, have been more organized but their sales support is poor. If ARCO bought the first CRAY in oil business, we shouldn't be treated this way.
118	Com	AT&T - PN	3	Because UNIX implementation has not been delivered as had hoped for. Also station support for UNICOS has been a real headache(USCP). Also FORTRAN compiler problems not gettng better UNIX final release was really a pre-release. Cost us a lot of effort. Releases in general for UNICOS have been poor. Would have expected more progress in the past 18 months.
117	Com	AT&T - PW	3	Our satisfaction with things CRI has fixed has increased. But our faith in the future of Cray software has declined. Things are not improving, quality is not going up. CRI not doing things in area of compiler performance, networking (which is our number one concern) and debugging that doesn't demonstrate progress. Design decisions seem to be going in the wrong direction. Things seem static in the debugging area.
214	Com	Boeing	99	
122	Com	CDC/SIS	1	Better communications with Cray people. The quality of the Cray people handling our account has improved since last year.

```
                  Cray Customer Satisfaction Survey
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               Q17:  Changes in satisfaction with Cray

                   1=Improved
                   2=NoChange
### C/G Company    3=Declined Comments
--- --- ---------- ---------- --------


212 Com Chev - Geo         99
106 Com Chev. OFR           1 Software difficulties we had were
                              responded to well.  COS 116 was
                              significantly improved over prior
                              software.
213 Com duPont             99
101 Com Exxon PRC           3 Hardware and Software reliability,
                              either it has gotten worse in past
                              year, or else we are paying more
                              attention to it.
102 Com Exxon USA           3 "Decline" rating caused by factors such
                              as how CRI handled 3480 interface.
                              Don't see Mendota Heights emphasis for
                              continuing COS.  Our impression is they
                              are moving COS people over to UNICOS.
                              This is a concern to me.  CRI making no
                              effort to plug up many COS holes.  In
                              many sections of code I see comments
                              such as "I don't know how to
                              handle-crash system."  This approach by
                              CRI is a very serious problem - it is
                              my number one concern with CRI.
108 Com Fairchild           2 This is good news as CRI already rated
                              high last year.
114 Com Ford                2 Always been satisfied with hardware,
                              have seen improvement in software.
                              I've heard that more QA has been going
                              into software such as COS 115.
103 Com GD                  3
210 Com GE Air             99
113 Com GM                  1 We've received additional on-site
                              support.  CRI finally stabilized their
                              marketing situation locally.  Corporate
                              HQ people are not as nice to us as are
                              the local CRI marketing people.  I felt
                              our local CRI marketing representative
                              did a good job in terms of negotiation,
                              but CRI HQ didn't like that
                              person'sperformance and transferred
                              him.  You have to be very durable to
                              work with our EDS people.
```

Cray Customer Satisfaction Survey

Q17: Changes in satisfaction with Cray

###	C/G	Company	1=Improved 2=NoChange 3=Declined	Comments
119	Com	Grumman	2	System speed has exceeded my expectations. Software and hardware quality control that I expected to be improving has not been. Last year I would have rated Cray a "5", the same as this year.
104	Com	Lock. Aero	2	
109	Com	Lock. M&S	2	Was happy last year, am happy this year.
126	Com	McDonnell	1	Cray’s development of new products in station area. Our on-site analyst has become more useful in terms of applications expertise. (Initially Cray was going to provide us with two applications oriented people - they originally supplied us with one.)
211	Com	Mobil	2	
105	Com	Omnibus	2	Should have gotten better, but hasn’t. The fact is there has been no improvement.
201	Com	Phillips	2	Satisfied then, satisfied now.
124	Com	Rockwell	2	We were also happy last year.
116	Com	Schlumberg	1	Cray put CTSS site expert in place at Schlumberg. Improvement in sales support, current person is more responsive than previous sales person.
301	Com	Scientific	99	
208	Com	Shell Oil	2	Memory problems almost made it decline.
306	Com	Std Oil	1	Agreement signed with CRAY to do CPU changeout.
304	Com	Sun Explor	2	Satisfied then, we are satisfied now.
205	Com	Univ Texas	2	
313	Com	Westing-FP	1	. Better response . Improved maintenance techniques
303	Com	Westing-RP	2	Last survey was 1 1/2 years ago, has seen no changes in support or availability.
115	Gov	AFGW	2	We have been and are very pleased with Cray, we rate Cray superior in every way.

Cray Customer Satisfaction Survey

Q17: Changes in satisfaction with Cray

###	C/G	Company	1=Improved 2=NoChange 3=Declined	Comments
127	Gov	Arnold Eng	1	More reliable software (e.g. COS 115, FORTRAN 114).
310	Gov	BRL	99	This is first survey!
207	Gov	DOE - Rich	99	
203	Gov	GA Tech -	2	Happy then, happy now.
130	Gov	LLNL	2	Cray getting to be a bigger company, we are not their biggest customer anymore. Our general satisfaction with Cray is high.
128	Gov	Los Alamos	1	Software and hardware people have tried to be more responsive.
120	Gov	Mellon Ins	2	My satisfaction should have improved. It is OK, but could be better.
129	Gov	MFE	3	C2 - spare parts problem and CPU reliability 1S - extensive maintenance increased reliability
204	Gov	Minneapoli	1	Hardware problems solved in good spirit.
121	Gov	NASA Lewis	2	This is a good rating.
112	Gov	NASA-Marsh	2	We've received really good support.
311	Gov	NASA/Am MS	1	. More mature company . Easier to deal with them
308	Gov	NASA/Am RB	2	No significant changes, one way or the other, over the past year.
302	Gov	NASA/Am-GL	2	
123	Gov	NCAR	1	Cray gave us double the SSD at no extra cost and gave us the fastest Cray they could. Very smooth XMP installation. Very good technical discussion with Cray engineers when putting IBM boxes on Cray.
206	Gov	NCI - CC	2	No problems at this installation.
202	Gov	NCI - JM	2	Already a very high level of satisfaction.
307	Gov	NRL - DG	2	Same problems remain, Software Q.A., Lack of knowledge by on-site representatives during hardware upgrade to X/MP-24.

```
                  Cray Customer Satisfaction Survey
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               Q17:  Changes in satisfaction with Cray

                        1=Improved
                        2=NoChange
### C/G Company     3=Declined Comments
--- --- ---------- ---------- --------


111 Gov Oak Ridge            2 Had good service, high expectations a
                               year ago.  Same true now, so unchanged
                               rating is a good sign.
309 Gov Sandia -CA           1 Because of contribution of DOE Systems
                               Group.
125 Gov Sandia -NM           1 Improved response time.  Improved
                               quality of people, CRI people are very
                               dedicated.
131 Gov Unisys               1 Software side has improved (getting
                               better people).
209 Gov Univ. IL             3
305 Gov Wright-Pat           1 Have had more experience together;
                               impressed with cooperation and
                               thoroughness of C.E.
```

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                  Cray Customer Satisfaction Survey
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      Q20E:  Enough contact & support from local marketing rep?


                   1=Yes
### C/G Company     2=No Comments
--- --- ---------- ----- --------


107 Com Apple          1 Cray really pays close attention to us.

110 Com ARCO           2 It's not just me that is disappointed in
                         sales support.  Others at ARCO are
                         disappointed, such as futures and financial
                         people. Sales support at CRAY at the moment
                         is unprofessional.  Many complaints made to
                         me.
118 Com AT&T - PN      1
117 Com AT&T - PW      1
214 Com Boeing         1
122 Com CDC/SIS        1
212 Com Chev - Geo     1
106 Com Chev. OFR      1 Except that financial, analytical responses
                         to our questions have been weak.
213 Com duPont         1
101 Com Exxon PRC      1 Get plenty from representative.
102 Com Exxon USA      2 Have sufficient contact, but insufficient
                         support.  We don't have much more to buy
                         from CRI, so we don't see him much.  Not
                         sure if this is good or bad.
108 Com Fairchild      1
114 Com Ford           1
103 Com GD             2 The support problem is at CRI headquarters.
                         Marketing representative does not get
                         headquarters support.  Frequency of contact
                         = O.K.
210 Com GE Air         1
113 Com GM             1 I'm very happy.
119 Com Grumman        2 Would like more support, such as help in
                         selling UNICOS to our management. (see Q20,
                         we've already requested this, but haven't
                         received response.)
104 Com Lock. Aero     1
109 Com Lock. M&S      1
126 Com McDonnell      1
211 Com Mobil          1
105 Com Omnibus        1
201 Com Phillips       1 He calls up, and explains Cray's directs,
                         phone & on-site.  Satisfied.
```

Cray Customer Satisfaction Survey

Q20E: Enough contact & support from local marketing rep?

###	C/G	Company	1=Yes 2=No	Comments
124	Com	Rockwell	1	
116	Com	Schlumberg	1	
301	Com	Scientific	1	See's him once per week and talks with him every 2-3 days. Representative has fulfilled all his requests.
208	Com	Shell Oil	1	
306	Com	Std Oil	1	New account representative, no ranking or comment, district manager is super.
304	Com	Sun Explor	1	We see him often enough.
205	Com	Univ Texas	1	
313	Com	Westing-FP	1	He deals with field service & only sees marketing representative for problem escalation.
303	Com	Westing-RP	2	"he's never here" - we work with local analysts/engineers to get information we expect from the representative.
115	Gov	AFGW	1	
127	Gov	Arnold Eng	1	
310	Gov	BRL	1	"Questions are answered quickly and calls are returned promptly."
207	Gov	DOE - Rich	1	Very happy.
203	Gov	GA Tech -	1	He's since resigned, and hasn't been replaced - it's been over 1 month.
130	Gov	LLNL	1	
128	Gov	Los Alamos	1	
120	Gov	Mellon Ins	1	
129	Gov	MFE	1	
204	Gov	Minneapoli	1	
121	Gov	NASA Lewis	1	Wish he hadn't moved to Cincinnati, distance is greater.
112	Gov	NASA-Marsh	1	
311	Gov	NASA/Am MS	1	1. "Very responsive when you seek him out." 2. "Randomly just comes by to see how everything is, excellent representatives."
308	Gov	NASA/Am RB	1	He listens then he takes action, very little B.S.
302	Gov	NASA/Am-GL	2	Representative does not understand some of their problems. "Communication is not too good."

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                     Cray Customer Satisfaction Survey
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      Q20E:  Enough contact & support from local marketing rep?


                         1=Yes
### C/G Company           2=No Comments
--- --- ---------- ----- --------


123 Gov NCAR               1
206 Gov NCI - CC           1 Helping in optimization of some coding.
202 Gov NCI - JM           1 Real happy.
307 Gov NRL - DG           1 - See representative often enough

                             - Slow in getting information to them
                             (forgets they asked for something).

                             - Too money oriented
111 Gov Oak Ridge          1
309 Gov Sandia -CA         1 "Very helpful, has the answers I want and is
                             quick about it."
125 Gov Sandia -NM         2 We have sufficient contact.  Once in a while
                             we feel we don't get all the support we
                             want. (e.g. long delivery dates after disk
                             drives bought.)
131 Gov Unisys             1
209 Gov Univ. IL           1
305 Gov Wright-Pat         1 Good, but technically shaky, however, he has
                             access to technical people with the answers.
```

Cray Customer Satisfaction Survey

Q20F: Enough contact & support from Cray corporate?

```
                          1=Yes
### C/G Company           2=No Comments
--- --- ---------- ----- --------


107 Com Apple               1
110 Com ARCO                1
118 Com AT&T - PN           2 See Q25
117 Com AT&T - PW           2 We would like higher level CRI people to
                              lobby to.
214 Com Boeing              1
122 Com CDC/SIS             2 Only time we see them is when there is a
                              real need.
212 Com Chev - Geo          1 Would like to be more involved.
106 Com Chev. OFR           1
213 Com duPont              1 We've never been refused a meeting.  It's
                              just right.
101 Com Exxon PRC           2 Made a trip to Cray recently.  Our
                              impression that CRI management seems unaware
                              of our problems.
102 Com Exxon USA           2 When we have severe problems would like to
                              interface direct with CR.
108 Com Fairchild           2 No requirement for additional interaction.
114 Com Ford                1
103 Com GD                  2 Like to see the VP Marketing more.
210 Com GE Air              1 I assume I get to them when I need them.
                              But they don't instigate conversation.




113 Com GM                  1 I don't feel we have CRAY corporate
                              management's attention on our FORTRAN
                              unhappiness.  I feel we shouldn't have to
                              personally go to Mendota Heights to plead
                              our case to CRI management.  Our concerns
                              should be automatically handled locally and
                              passed on to CRI management and get
```

resolved.

Cray Customer Satisfaction Survey

Q20F: Enough contact & support from Cray corporate?

###	C/G	Company	1=Yes 2=No	Comments
119	Com	Grumman	1	
104	Com	Lock. Aero	1	Quarterly contact is not too much, it's about right.
109	Com	Lock. M&S	1	
126	Com	McDonnell	1	
211	Com	Mobil	1	It could improve.
105	Com	Omnibus	1	
201	Com	Phillips	1	Any time we need them, they're there.
124	Com	Rockwell	1	
116	Com	Schlumberg	1	
301	Com	Scientific	1	He feels free to talk on the telephone with Cray executives. Sees executives every 3 months.
208	Com	Shell Oil	1	Not alot, but what we have is fine. Don't really want to see more.
306	Com	Std Oil	1	I have been able to talk to or see them anytime I want.
304	Com	Sun Explor	1	No difficulty in getting through to senior management.
205	Com	Univ Texas	1	If I get into a bind, I want to see them.
313	Com	Westing-FP	1	Cray management is familiar with his site.
303	Com	Westing-RP	1	We have pretty good rapport. We see them at CUG meetings.
115	Gov	AFGW	1	
127	Gov	Arnold Eng	1	
310	Gov	BRL	99	Needs more experience with CRAY to properly answer.
207	Gov	DOE - Rich	1	Appropriate amount. Not much to talk about. They were available when we needed them.
203	Gov	GA Tech -	1	
130	Gov	LLNL	1	
128	Gov	Los Alamos	2	Would like more, e.g. hardware planning and support.
120	Gov	Mellon Ins	1	We do as a center (have enough contact). I personally would like more. I feel I can get access if I request it. I visited Cray HQ with Jim Kasdorf and was pleased I could meet with Les Davis and Steve Chen.
129	Gov	MFE	1	
204	Gov	Minneapoli	2	On the edge, couldn't hurt to work with more. Not necessarily their fault, both of ours.

Cray Customer Satisfaction Survey

Q20F: Enough contact & support from Cray corporate?

###	C/G	Company	1=Yes 2=No	Comments
121	Gov	NASA Lewis	1	They did an excellent job on their Feb. 5th visit.
112	Gov	NASA-Marsh	99	Don't have a need.
311	Gov	NASA/Am MS	1	Personally, not much, her boss yes.
308	Gov	NASA/Am RB	1	His marketing representative gives them ample opportunities to see CRAY, about 1 every 6 months since 1982.
302	Gov	NASA/Am-GL	99	"Doesn't matter - local representative responsiveness is most important."
123	Gov	NCAR	1	
206	Gov	NCI - CC	1	
202	Gov	NCI - JM	1	Everything is fine.
307	Gov	NRL - DG	1	Management has been available when needed.
111	Gov	Oak Ridge	1	Don't feel a need for it, have more than enough.
309	Gov	Sandia -CA	1	"Have had meetings when needed and answered their questions."
125	Gov	Sandia -NM	1	
131	Gov	Unisys	1	I have never talked to John Rollwagen. Most interaction is at regional/local level.
209	Gov	Univ. IL	99	Deal with region, everything is O.K.
305	Gov	Wright-Pat	1	Has attended symposia, is regularly visited by CRAY executives.

Cray Customer Satisfaction Survey

Q21: Are you kept informed of Cray’s direction?

###	C/G	Company	1=Yes 2=No	Comments
107	Com	Apple	1	
110	Com	ARCO	1	
118	Com	AT&T - PN	2	YMP and C3 directions, like to see Cray’s view of graphics workstations, etc. Cray seems to view Cray as a stand alone machine and its up to me to figure out what to do. CRI seems to be stuck selling MIPS. Somebody at CRI management should be selling AT&T management on on how CRI fits strategically into AT&T‘s future. Cray doesn’t feel the hunger of getting people to buy, due to lack of competition.
117	Com	AT&T - PW	1	
214	Com	Boeing	2	They must tell me more.
122	Com	CDC/SIS	1	
212	Com	Chev - Geo	1	
106	Com	Chev. OFR	1	
213	Com	duPont	1	
101	Com	Exxon PRC	2	Software and future releases information.
102	Com	Exxon USA	2	UNICOS plans, COS future.
108	Com	Fairchild	2	CRI directions in new hardware systems software and networking capabilities. What market segments is CRI forgetting?
114	Com	Ford	1	
103	Com	GD	1	I am not really too interested, have many local problems to handle. I do worry about UNICOS. Incompatibility could be disasterous to Cray.
210	Com	GE Air	2	No updates! 9 months ago, too much time.
113	Com	GM	1	
119	Com	Grumman	2	Would like to know what product line will look like a year from now. (e.g. what will YMP be, and when?) This would help our planning.
104	Com	Lock. Aero	1	
109	Com	Lock. M&S	1	
126	Com	McDonnell	2	New software directions.
211	Com	Mobil	1	Both hardware and software could be better.
105	Com	Omnibus	2	More software direction information.
201	Com	Phillips	1	Marketing explained new things, keeps them current.

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                   Cray Customer Satisfaction Survey
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           Q21:  Are you kept informed of Cray's direction?


                         1=Yes
### C/G Company           2=No Comments
--- --- ---------- ----- --------


124 Com Rockwell         2 More about product planning, software
                           release plans and content.  (AL)
116 Com Schlumberg       1
301 Com Scientific       2 He always likes to know more hardware and
                           software.
208 Com Shell Oil        1
306 Com Std Oil          2 Software working on it, just not there yet.
304 Com Sun Explor       1
205 Com Univ Texas       1 We produce them, we have to ask.
313 Com Westing-FP       1
303 Com Westing-RP       2 More frequent announcements.  They must ask
                           to confirm rumors or confirm information
                           obtained from other CRAY sites.
115 Gov AFGW             1
127 Gov Arnold Eng       2 Product announcements.
310 Gov BRL              2
207 Gov DOE - Rich       1 Contract with Boeing gives them everything.
203 Gov GA Tech -        1 Suprises: Cray SW (reduced performance),
                           introduction of Cray 416.
130 Gov LLNL             1
128 Gov Los Alamos       2 Want to be more in tune with Cray's
                           performance, mainframe and reliability
                           targets.  As large a customer as we are,
                           would like to have a higher level of
                           information.  Exchange on future directions
                           with Cray.
120 Gov Mellon Ins       1 We want to be kept as informed as possible,
                           as it is important to our long range
                           planning.
129 Gov MFE              1
204 Gov Minneapoli       2 Close call - s/w - not sure of their plans.
121 Gov NASA Lewis       1
112 Gov NASA-Marsh       2 I hear of developments in a round about way.
                            I may be missing something.
311 Gov NASA/Am MS       2
308 Gov NASA/Am RB       1
302 Gov NASA/Am-GL       2 As a company CRAY is getting fragmented due
                           to growth.  Must find right person, should
                           document information better.
123 Gov NCAR             1
```

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05/05/87
                    Cray Customer Satisfaction Survey
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              Q21:  Are you kept informed of Cray's direction?


                        1=Yes
### C/G Company          2=No Comments
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206 Gov NCI - CC           1
202 Gov NCI - JM           2 We are kind of small, we have a feeling we
                             are not getting asked enough about our
                             input.
307 Gov NRL - DG           2 Direction of CRAY/DEC relationship.
111 Gov Oak Ridge          1 Got plenty of hardware information.
309 Gov Sandia -CA         1 Would like to feel better about UNICOS
                             direction on the CRAY 1/S. Sees biggest
                             UNICOS efforts on X/MP & CRAY-2.
125 Gov Sandia -NM         1
131 Gov Unisys             1
209 Gov Univ. IL           1
305 Gov Wright-Pat         1
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                   Cray Customer Satisfaction Survey
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               Q22:  Is C.U.G. effective, do you use it?

                    Effective? Use it?
                         1=Yes   1=Yes
### C/G Company          2=No    2=No Comments
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107 Com Apple                2       1 CUG, not at all effective as a
                                       method to communicate with CRI.
                                        CUG, is good for communication
                                       with other CRI users.
110 Com ARCO                 2       1 Haven't participated recently.
118 Com AT&T - PN            1       1 CUG is too COS oriented.  Why
                                       is CUG still generating wish
                                       list for COS when CRI won't
                                       support it beyond rel. 116?
117 Com AT&T - PW            2       2 Have only been using Cray for
                                       18 months, haven't seen a
                                       reason to use CUG.
214 Com Boeing               2       1 It does more on technician
                                       level.  Not many high level
                                       people there.
122 Com CDC/SIS             99       2 We send a couple of people.  I
                                       don't go personally, we use
                                       CUG, mainly to communicate with
                                       other users in order to learn
                                       what's new that might be
                                       helpful to us.
212 Com Chev - Geo           1       1
106 Com Chev. OFR            2       2 CUG discourages us from
                                       "washing dirty laundry".
213 Com duPont              99       1
101 Com Exxon PRC            2       0 CRI needs specific input from
                                       individual customers, so
                                       concerns, complaints don't get
                                       lost when answers are
                                       summarized by CVG for CRI.
102 Com Exxon USA            1       1
108 Com Fairchild            1       1
114 Com Ford                 1       1 NS also uses CDC user group and
                                       doesn't get response as good as
                                       CRAY.
103 Com GD                  99       2 I've never seen Rollwagen
                                       acknowledge CUG's value and/or
                                       the impact it has on CRI
                                       decisions.  I also have a tight
                                       travel budget, often times
                                       conflict with my schedule.
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                  Cray Customer Satisfaction Survey
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              Q22:  Is C.U.G. effective, do you use it?

                   Effective? Use it?
                        1=Yes   1=Yes
### C/G Company          2=No    2=No Comments
--- --- ---------- ---------- ------- --------


210 Com GE Air              1       2
113 Com GM                  2       1 We tell CRAY middle management
                                      our problems, but don't get
                                      effective resolution.  (Example
                                      is FORTRAN people's
                                      non-responsiveness to us.)
                                      Largest benefit of CUG is
                                      talking to other sites.  I quit
                                      going because couldn't reach
                                      CRAY management via CUG.
119 Com Grumman             1       1 It's not clear if Cray
                                      management just comes to listen
                                      or if they plan to do anything
                                      about what they hear.
104 Com Lock. Aero          1       1 Was not effective until mutual
                                      interest group was established.
                                       We've formed a mutual interest
                                      group for aerospace, CRI has
                                      responded.  This has been the
                                      reason why we now feel CUG is
                                      an effective channel to
                                      communicate to Cray management.
109 Com Lock. M&S           1       1 Communicate with CRI management
                                      and other users.  Formed
                                      aerospace mutual interest group
                                      - has been very effective.
                                      Lemmerman is very helpful.
126 Com McDonnell           1       1 My rating would be a 6 or 7 on
                                      CUG as a channel to CRI
                                      management.  Always will be
                                      need for one-on-one
                                      interactions between Cray and
                                      customers.  CUG value to us is
                                      talks with other users as well
                                      as to make our collective voice
                                      heard.
211 Com Mobil               2       2 He doesn't believe user groups
                                      are a good mechanism to talk to
                                      management.  Better to be
                                      one-on-one.
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                    Cray Customer Satisfaction Survey
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                Q22:  Is C.U.G. effective, do you use it?

                         Effective? Use it?
                              1=Yes   1=Yes
### C/G Company                2=No    2=No Comments
--- --- ---------- ---------- ------- --------


105 Com Omnibus                   1       2 Too indirect a means of getting
                                            solutions.  Can call friends.
201 Com Phillips                  0       2 Software development uses the
                                            group, he's hardware.
124 Com Rockwell                  2       1 CRI only has one meeting a year
                                            in U.S.  This is not enough.
                                            Aerospace group is good, was
                                            forced to be formed due to
                                            inadequacies of CUG.  (AL)
116 Com Schlumberg                2       1
301 Com Scientific                1       1 No suggestions.
208 Com Shell Oil                 1       1
306 Com Std Oil                   2       1 Easier to pick up the phone &
                                            talk to them.
304 Com Sun Explor               99       2 None of these 3 men went to CUG
                                            meetings, they have sent less
                                            senior persons than themselves.
205 Com Univ Texas                1       2 My people are, I'm not.
313 Com Westing-FP                1       1 Cray now has more statistics;
                                            not just those for hardware
                                            reliability.
303 Com Westing-RP                1       1 Because it is effective.
                                            Executives are visible through
                                            CUG.
115 Gov AFGW                      2       2 Don't see any CUG communication
                                            with Cray management.  I don't
                                            expect CUG to do this.  I (Col.
                                            Fye) would want to communicate
                                            with Cray management through my
                                            office.  I don't receive any
                                            notices of CUG meetings.
127 Gov Arnold Eng                1       2
310 Gov BRL                      99       2 Not used previously, first CUG
                                            next month, sending assistant
                                            system administrator and one
                                            analyst.
207 Gov DOE - Rich               99      99
203 Gov GA Tech -                 1       1
130 Gov LLNL                      2       2 If I want to contact Cray
                                            management I call them.
```

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                  Cray Customer Satisfaction Survey
                  ---- -------- ------------ ------

              Q22:  Is C.U.G. effective, do you use it?

                        Effective? Use it?
                             1=Yes   1=Yes
### C/G Company              2=No    2=No Comments
--- --- ---------- ---------- ------- --------


128 Gov Los Alamos          1       1 Not sure if Cray listens.
120 Gov Mellon Ins         99       1 Will attend firs CUG meeting
                                      this April.
129 Gov MFE                 2       2 Get better response on an
                                      individual basis due to large
                                      number of machines here.  Use
                                      CUG to communicate with other
                                      users.
204 Gov Minneapoli          1       1
121 Gov NASA Lewis          2       1 CUG impresses me as a weak
                                      willed body that won't stand up
                                      to Cray if it is a
                                      controversial issue.  I like
                                      the passing around of internal
                                      design documents which happened
                                      in Seattle regarding archiving.
112 Gov NASA-Marsh         99       1 Can't judge effectiveness.
311 Gov NASA/Am MS         99       2 NASA/AMES sends engineering
                                      development staff to CUG.
308 Gov NASA/Am RB          2       1
302 Gov NASA/Am-GL          2       1 "Mediocre" - 1) "squeaky wheel
                                      syndrome" - one problem does
                                      not represent all  2) He
                                      personally talks to (mid-level)
                                      developers in software areas
                                      where he is having problems, as
                                      part of effort to find the
                                      "right person".
123 Gov NCAR                2       2 CUG is itself an ineffective
                                      organization, but this isn't
                                      Cray's fault.
206 Gov NCI - CC            1       1 Nice place to share common
                                      problems.
202 Gov NCI - JM            1       1 CUG is good for bouncing ideas
                                      off other users.
307 Gov NRL - DG            1       2 Her boss and 1-3 technical
                                      people attend CUG.  Has heard
                                      good reports on CUG, but does
                                      not know how much CRAY listens.
111 Gov Oak Ridge           1       1
```

Cray Customer Satisfaction Survey

Q22: Is C.U.G. effective, do you use it?

###	C/G	Company	Effective? 1=Yes 2=No	Use it? 1=Yes 2=No	Comments
309	Gov	Sandia -CA	2	1	"Not a good means for CTSS - meetings are not sufficiently CTSS oriented."
125	Gov	Sandia -NM	2	99	CUG = Not too much effectiveness, it's more effective when labs and DOE get together and approach CRI.
131	Gov	Unisys	1	1	
209	Gov	Univ. IL	99	2	We send other people, CUG more software oriented.
305	Gov	Wright-Pat	99	99	Will be attending the upcoming meeting, it will be his first.

Cray Customer Satisfaction Survey

Q23: How can interaction between Cray & customers improve?

###	C/G	Company	Comments
107	Com	Apple	Interaction going well. No suggestions.
110	Com	ARCO	If CRAY could put together consistent sales support, would be very positive step. Lack of consistency in sales support is a function of the sales representative assigned. This shouldn't be, however. CRAY management has the responsibility to see that CRI sales support is consistent regardless of who the representative is.
118	Com	AT&T - PN	Have a clear line of responsibility regarding software projects. Don Mason used to be responsible for UNICOS, but who is now?
117	Com	AT&T - PW	None - we have been treated well in terms of interactions. However, CRI responses are not always satisfactory.
214	Com	Boeing	
122	Com	CDC/SIS	Cray executives should visit us on their own initiative every now and then. We just bought a $10 million Cray system. It would have been a nice touch if some Cray executive that perhaps we hadn't interfaced with before, had contacted us as a follow-up to the sale.
212	Com	Chev - Geo	Very fine, education and management presentations fine.
106	Com	Chev. OFR	Provide more analytical (price performance) related support (e.g. cofiguration of storage benefits of SSD vs. larger memory).
213	Com	duPont	
101	Com	Exxon PRC	Working at technical level has gotten better. At management level CRI needs to get middle (operations) management out to customers to hear it straight or instead of being filtered through CRI salesman.
102	Com	Exxon USA	Would like to see evidence that corporate CRI management really understands our frustrations. We need confidence from them that they are heading us in the right direction.
108	Com	Fairchild	CRI do more writing in journals. Have annual technology conference where CRI would present their future directions. CRI should have their own journal for customers to describe their applications for a management level audience.

Cray Customer Satisfaction Survey

Q23: How can interaction between Cray & customers improve?

###	C/G	Company	Comments
114	Com	Ford	
103	Com	GD	
210	Com	GE Air	
113	Com	GM	
119	Com	Grumman	Like more feedback on software problems concerning what is going on that takes so much time. If we had a better understanding of Cray issues, perhaps we could better appreciate the time we have to wait for fixes.
104	Com	Lock. Aero	Would like to see more performance information on our installation from CRI, also more openness regarding what other installations are doing. We hit problems, especially on station, that CRI has already discovered but not communicated to us.
109	Com	Lock. M&S	Can't think of anything specific. Interactive goes well.
126	Com	McDonnell	
211	Com	Mobil	They have been responsive, but really didn't answer our questions, when they did, they gave us wrong answers. Difficult for us to get the real expert. (If one exists!)
105	Com	Omnibus	Problem is not one of getting access to CRI management, problem is one of getting satisfactory resolution of difficulties.
201	Com	Phillips	Working fine, keep the same.
124	Com	Rockwell	1. Have more frequent CUG, USA meetings. (AL) 2. We would like to see more CRI middle management visit us. (AL) 3. We would like to see Cray plans communicated to us at our location twice a year.
116	Com	Schlumberg	Don't like to see surprises regards Cray by reading something in a newspaper. Don't want to see Cray people just for the sake of seeing them, but would like to see some more carefully planned interaction. We have technology reviews annually between key Schlumberger people and key vendor people. This helps planning. Would like to see Cray do something like this. We are very interested in futures so we can develop our own 3 year plans better.

Cray Customer Satisfaction Survey

Q23: How can interaction between Cray & customers improve?

###	C/G	Company	Comments
301	Com	Scientific	
208	Com	Shell Oil	Very satisfied with current level.
306	Com	Std Oil	
304	Com	Sun Explor	
205	Com	Univ Texas	Be there when I need you. Don't give me the runaround. They're been very good, very straight foward.
313	Com	Westing-FP	Continue CUG with: good speakers, problem resolution. Remember Cray users are united.
303	Com	Westing-RP	Marketing representative could provide more information, especially on product announcements.
115	Gov	AFGW	Doesn't need improvement, I am more than satisfied.
127	Gov	Arnold Eng	Provide more on-site visits.
310	Gov	BRL	- Problem reporting - Status reports - Bug reports - Software upgrades
207	Gov	DOE - Rich	Runs very smoothly, no complaints.
203	Gov	GA Tech -	Cray very interested and responsive to what we say.
130	Gov	LLNL	
128	Gov	Los Alamos	Like to see more software interactions regarding UNICOS directions (PRD). Did this recently, would like to see more of this where we can comment. Like to see more collaborative efforts with Cray (e.g. joint development efforts).
120	Gov	Mellon Ins	Would like to have contact with Cray regional technical sales support analysts more frequently. Would like to see these people take the initiative and call us to set up a meeting to brief us on developments at other sites, etc. IBM does this very effectively, DEC does not.
129	Gov	MFE	Interaction is very good.
204	Gov	Minneapoli	Meeting more often with technical staff and management. New marketing person for us is good.
121	Gov	NASA Lewis	Like the annual visit to our site. Contact through salesman works well regarding new product directions.

Q23: How can interaction between Cray & customers improve?

###	C/G	Company	Comments
112	Gov	NASA-Marsh	Provide client access to Cray's SPR problem database.
311	Gov	NASA/Am MS	
308	Gov	NASA/Am RB	Scientific/technical forum, CRAY/DEC forum suggestion. CRAY should get E-MAIL capability with users.
302	Gov	NASA/Am-GL	Listen to "serious" problems.
123	Gov	NCAR	Would be nice if Cray established a forum for innovative owners of Cray systems to advise on both hardware and software future directions. This used to be done one-on-one with Seymour several years ago. Would like to see Cray do this type of thing more formally. Don't think this is taking place now.
206	Gov	NCI - CC	Satisfied, no suggestions.
202	Gov	NCI - JM	More interactive online bulletin board type 'things', so we could get timely information.
307	Gov	NRL - DG	Have CRAY software experts visit customers periodically. Hard to get information on 3rd party software running under UNICOS.
111	Gov	Oak Ridge	Don't feel a need for more interaction.
309	Gov	Sandia -CA	- Reduce analyst turnover - Get better analysts at their site
125	Gov	Sandia -NM	- I like it when Bruce Kasson calls to indicate satisfaction survey is coming. - Like to have access when problems exist. - It is nice to have visits from CRI corporate twice a year or so. We appreciate that, during annual visits, key is for CRI to listen.
131	Gov	Unisys	None - keep on doing what you have been doing.
209	Gov	Univ. IL	More stringently enforce the escalation procedure as advertised, then I'd be happy.
305	Gov	Wright-Pat	

Cray Customer Satisfaction Survey

Q25: Anything else Cray can do?

###	C/G	Company	Comments
107	Com	Apple	Cray could make progress on the C computer faster. CRI needs to get central memory management for interactive jobs. Need satisfactory response time while still running batch jobs. Support all UNIX system V features. Support as many Berkeley UNIX features as possible.
110	Com	ARCO	
118	Com	AT&T - PN	AT&T is one of the largest companies in the world. CRI contacts are at my level. CRI never, to my knowledge, contacts AT&T upper management. Don't know where Rollwagen spends his time, but it isn't with us. We have been a customer since 1979 and no CRI executive has visited us. Cray not seem to have a clear understanding of where it is going and what it is going to do. Would like to have a better feel for this. I have a UNICOS product requirements manual, but it is not doing the job. No priorities given, no direction shown. In contrast DEC's UNIX strategy is clear, CRI's is not!
117	Com	AT&T - PW	No - all covered above.
			Get everyone at CRI on electronic mail, and have them respond.
214	Com	Boeing	Many items, but I'll share them at a management meeting with Cray.
122	Com	CDC/SIS	Most important things to me are service quality and responsiveness when we have problems. Everything else is secondary. Improve the communication between Cray local support people and Cray HQ support people.
212	Com	Chev - Geo	Chippawa Falls support - I'm not comfortable with, they take too long.
106	Com	Chev. OFR	Find innovative ways to reduce costs in all areas - software, maintenance, etc. Tape support could be improved.
213	Com	duPont	
101	Com	Exxon PRC	Make software more reliable. Improve diagnostics tools and hardware reliability. Devote more management time to maintenance of installed base instead of focusing on building next machine.

Cray Customer Satisfaction Survey

Q25: Anything else Cray can do?

###	C/G	Company	Comments
102	Com	Exxon USA	Tell us COS plans (e.g. error recovery). CRI appears to be going for new markets, is putting less emphasis on current markets than needs to be. We have heavy volume tape usage - like to see CRI commitment.
108	Com	Fairchild	Improve CRI software substantially - this would improve customer satisfaction greatly. Bring software quality up to level of hardware.
114	Com	Ford	CRAY has priced memory upgrades inappropriately ($1 million for 1M words is too much). DEC used to do this, but market forced them down.
103	Com	GD	An important need is evidence by CRI of a sincere interest in and consideration of CRI customers by CRI upper management. In our business we are being forced to put warranties on our products. In contrast if Cray goes down and melts, shouldn't be capable of melting down to begin with. CRI image by GD: If we follow CRI rules, then maybe they'll help us. What we need from CRI is something more like IBM's attitude - "we are with you, we'll do anything to help. Fugitsu likely has better reliability than CRI.
210	Com	GE Air	
113	Com	GM	Main thing is to fix the FORTRAN compilers.
119	Com	Grumman	Would like to have Cray help us more in selling our users on using the Cray more. We were invited to give a presentation to Lorin Lemmerman and a group of Cray sales and marketing people last September in Minnesota concerning our "Report Card" on Cray. John Riordan gave a two hour presentation on areas meeting improvement. Have not to this day seen any evidence of Cray fixing these areas for us.
104	Com	Lock. Aero	CRI has been responsive to us (e.g. they hired aerospace expert who has been very helpful.) Responsiveness is good from president on down, like to see CRI continue to build biggest and fastest computers at a reasonable price.
109	Com	Lock. M&S	- Reduce system price - Offer a legitimate manufacturers lease (i.e., CRI arrange leases themselves at a rate lower than available from third parties). - Retrain all CRI ex-IBM employees

- CRI doing pretty well.

Q25: Anything else Cray can do?

###	C/G	Company	Comments
126	Com	McDonnell	- Have a multi-experience level FORTRAN training series. - Develop top level management presentations concerning new product announcements, etc. IBM and DEC do this. Example would be a 30-40 minute presentation on where Cray is going. Not enough MDD managerial level people really know who Cray is and wherethey are going.
211	Com	Mobil	By and large, we just need additional technical information. We are satisfied with Cray. Concern for maintenance, and familiarity with their own diagnostics.
105	Com	Omnibus	CRI could provide opportunity for peripherals to be obtained by their customers, independently of CRI. When CRI offers new peripherals, CRI should provide conversion methods that don't require additional, separate charges. Would like conversion costs to be buried in the new peripheral cost, it's easier to justify. Need to have CRI address problem of hosting graphics equipment.
201	Com	Phillips	Get out of the peripheral business! Tie other vendors DASD into the machine. (like you do with tape). Cray is #1 in supercomputers, but not in DASD. Stick with what you do best.
124	Com	Rockwell	- Concerned that UNICOS migration will be painful. We want migration tools to UNICOS. - Like to see a training center in S. California. - Want to see application software for-UNICOS. (JL) - Want to have multiple level security in UNICOS expedited. - Would like to see removable disk devices. - Increased classified support. - Improve and make more comprehensive the hardware diagnostic tools.

Cray Customer Satisfaction Survey

Q25: Anything else Cray can do?

###	C/G	Company	Comments
116	Com	Schlumberg	Nothing else comes to mind.
301	Com	Scientific	Needs to resolve software problem with tape drives. Pending, response due soon.
208	Com	Shell Oil	More quality DASD - more reliable, stable.
306	Com	Std Oil	
304	Com	Sun Explor	
205	Com	Univ Texas	Being able to take hardware maintenance courses. Make technical documentation on mainframe, and peripherals availability.
313	Com	Westing-FP	
303	Com	Westing-RP	Lack of compatibility between O.S. versions, "A biggie" -- user must recompile code.
115	Gov	AFGW	Would like to receive information regularly on CUG's upcoming meetings. (Col. Fye)
127	Gov	Arnold Eng	
310	Gov	BRL	
207	Gov	DOE - Rich	Lower prices (laughing). National Security Agency certification for classifed documents.
203	Gov	GA Tech -	CTSS support is imperative to have. Improvement is possible, and we should realistically expect it.
130	Gov	LLNL	Improve hardware reliability. Improve performance of FORTRAN compilers. These are two areas where Cray suffers in relation to the Japanese. Get the YMP off the dime and out the door. We are looking forward to the next generation. By and large Cray does pretty good job.
128	Gov	Los Alamos	Fastest machines, lower prices. We vastly under understaffed in terms of software analysts per machine. Design more reliability, availability and serviceability into Cray hardware. (Availability of hardware now is too low)

Cray Customer Satisfaction Survey

Q25: Anything else Cray can do?

###	C/G	Company	Comments
120	Gov	Mellon Ins	Increase functionality and useability of the operating system. Provide better transition path from one release to another. There are changes which Cray is not adequately telling us about that surprise and impact our users. This happened when going from 114 to 115. This concerns me-is it a philosophy of Cray’s? On UNICOS, Cray should support full function UNIX. If Cray doesn‘t, Cray will suffer when competitors do.
129	Gov	MFE	Better hardware diagnostics, different attitude towards preventive maintenance, stop insisting on module homing, improvement in Cray 2 spare parts availability.
204	Gov	Minneapoli	Responsiveness to customer requests and requirements (especially s/w).
121	Gov	NASA Lewis	Would like to be able to reconfigure all resources on the fly. Like to see better tools for resource management. COS still seems immature. Why doesn’t it warn us it is about to run out of disk space? Seems COS has too many rough edges. I still see vestiges of original Cray attitude whereby software people at Mendota develop crude solutions and rely on hardware speed to cover it.
112	Gov	NASA-Marsh	
311	Gov	NASA/Am MS	Problems with stability of software releases, 1.15 - not stable; 1.16 is more stable than expected. Going to run UNICOS soon.
308	Gov	NASA/Am RB	
302	Gov	NASA/Am-GL	Give us more power for less money.
123	Gov	NCAR	We would like to have a closer interaction with Cray concerning UNICOS strengths and weaknesses, and its timetable. Would like Cray to develop an environment for the operating system that is friendly to the scientific user (e.g. a shell over UNICOS). Would like to see this within 18-24 months from now.

Expand the library of applications software (e.g. graphics, math functions, etc.)

Cray Customer Satisfaction Survey

Q25: Anything else Cray can do?

###	C/G	Company	Comments
206	Gov	NCI - CC	Software needs improvement, I know they can do a better job.
202	Gov	NCI - JM	Cut their prices.
307	Gov	NRL - DG	QA on CFT Fortran, Problems with Wollongong software.
111	Gov	Oak Ridge	CRAY has too many constraints for government customers concerning software licensing we've spent excessive amount of time in past three months dealing with CRI lawyers.
309	Gov	Sandia -CA	Increase support for CTSS and UNICOS.
125	Gov	Sandia -NM	- Like to encourage CRI to have more CTSS involvement. - I feel CRI is listening and planning better in the past year. - We like to see skilled technicians on the floor willing to pay the price of bringing new people up to speed so long as I have sufficient experienced people on hand at the same time.
131	Gov	Unisys	Not that I can think of.
209	Gov	Univ. IL	Very happy when system is running and on-site people. The real problem is lack of effective diagnostics to solve hardwareproblems.
305	Gov	Wright-Pat	

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                        Cray Customer Satisfaction Survey
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                            Q26:  Buy from Cray again?


                         1=Yes
### C/G Company           2=No Comments
--- --- ---------- ----- --------


107 Com Apple              1 Fast graphics support.  Overall software
                             support.
110 Com ARCO               1 Fastest gun on the block and we understand
                             the environment.
118 Com AT&T - PN          1 Don't see what choice I have.  A more
                             interesting question would be if I got money
                             for supercomputing, would I spend it on
                             supercomputers?  If I got $10 million I
                             might buy 10 Alliants.
117 Com AT&T - PW          3 Who is the alternative?  A large AMDAHL or
                             IBM machine is a supercomputer for when we
                             need a UNIX time-sharing system.  One will
                             argue AMDAHL or IBM is superior.  If the job
                             mix was Vectorized, heavily numeric,
                             Floating Point oriented, Cray would be
                             choice.
214 Com Boeing             1 Most definitely (until something better
                             comes up).
122 Com CDC/SIS            1 Cray is the accepted market leader.  We are
                             in the services business, so we must reflect
                             market demands.
212 Com Chev - Geo         3
106 Com Chev. OFR          1 Decision depends on types of jobs.  If
                             needed immense memory, might go to IBM.
213 Com duPont             1
101 Com Exxon PRC         99 Just not sure at this time.  Not sure we
                             will be willing to put up with CRI
                             reliability.
102 Com Exxon USA          2 Would go with IBM due to their reliability.
                             Would give up speed for reliability.
108 Com Fairchild          1 Current experience with CRI.  Our conviction
                             CRI is the leader.  Leverage our software
                             investment.
114 Com Ford               3 Are looking now, performance is being pushed
                             down to distributed systems - we need to
                             evaluate this.  When compared CRAY is on
                             non-single job.
103 Com GD                 3 New competition will give CRI a run for
                             their money.  We would consider ETA.  We
                             would look carefully around before making
                             decision.  It would not be an automatic
                             "yes" in the beginning.  It could be a "yes"
                             in the end.
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                  Cray Customer Satisfaction Survey
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                      Q26:  Buy from Cray again?


                   1=Yes
### C/G Company     2=No Comments
--- --- ---------- ----- --------


210 Com GE Air         1
113 Com GM             1 Now buying CRAY, there is no learning of new
                         system.  CRI handles our applications best
                         of any system around.
119 Com Grumman        1 We continually ask ourselves this and we
                         continually say "yes".All things considered,
                         Cray still better than the competition.
104 Com Lock. Aero     1 We are not a lab.  We like to minimize
                         number of vendors we have. We are keeping
                         appraised of ETA, Japanese, CONVEX, etc.  If
                         buying literally tomorrow, would go CRI.
109 Com Lock. M&S      1 - CRI is the only game in town at the
                         present time, otherwise if they had
                         competition we would look around.

                         - CRI needs competition.
126 Com McDonnell      1 - Reliability, price performance,
                         willingness to solve problems.

                         - Continue station development.  The better
                         the accessibility to Cray the easier for us
                         to justify additional machines.
211 Com Mobil          1
105 Com Omnibus        1 If our 4 year old approval was to be
                         recreated, we would buy CRAY.  However,
                         knowing what we know now, CRAY was wrong
                         choice due to price performance.  Might swap
                         one CRAY for another one.
201 Com Phillips       1 Highly satisfied.
124 Com Rockwell       1 CRI are the supercomputer people.  They
                         provide performance.  Station software is
                         good, application software is readily
                         available.  (JL)
116 Com Schlumberg     3 Cray would be high on our list for
                         consideration.  Issue involves whether we
                         would upgrade Crays, go distributed
                         processing with minicomputers, or other
                         options.  Is function of processing
                         needs, if we had more seismic, would favor
                         Vector processing.
```

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                          Cray Customer Satisfaction Survey
                          ---- -------- ------------ ------

                              Q26:  Buy from Cray again?


                         1=Yes
### C/G Company           2=No Comments
--- --- ---------- ----- --------


301 Com Scientific       1 "Definitely" - Cray is the only viable
                           supercomputer, Cray is upgradeable from the
                           current product, Cray is the accepted
                           standard, easy to use for customers.
208 Com Shell Oil        1 Highly satisfied.
306 Com Std Oil          1 Provides compatibility with application
                           software, and provides very high performance
                           capability.
304 Com Sun Explor       3 "probably would" - would do analysis again,
                           if tomorrow, then CRAY is only choice.
205 Com Univ Texas       1
313 Com Westing-FP       1 . "Best running general purpose
                           supercomputer."
                           . Upward compatibility
303 Com Westing-RP       1 Only game in town right now, competition
                           would be helpful.

115 Gov AFGW            99 Can't do sole source.
127 Gov Arnold Eng       1 Cray is only competitor in the market.
310 Gov BRL              1 "Generally, we're very happy with their
                           products."
207 Gov DOE - Rich       1 We still have to go through competitive
                           process.
203 Gov GA Tech -        1
130 Gov LLNL             1 Cray does have competition.  Cray has a high
                           probability of winning a year from now, but
                           one can always be surprised by competition.
128 Gov Los Alamos       4 Go in a competitive procurement.  (This
                           likely required for next supercomputer
                           acquisition)
120 Gov Mellon Ins       1 Competition today doesn't have enough
                           experience.  Two years from now they will
                           have the experience to compete against Cray.
                            Competition will be fierce.
129 Gov MFE              1 Keeping in mind our legal responsibility for
                           competitive bidding. Best machines for our
                           purposes on the market and CRI's willingness
                           to cooperate.
204 Gov Minneapoli       3
121 Gov NASA Lewis       4 Must be competitive by government
                           regulation.
```

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                  Cray Customer Satisfaction Survey
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                      Q26:  Buy from Cray again?


                   1=Yes
### C/G Company     2=No Comments
--- --- ---------- ----- --------


112 Gov NASA-Marsh     1 Cray has best silution on the market right
                         now.  Cray has most reliable high-speed
                         supercomputers available with the most
                         available software.
311 Gov NASA/Am MS     1 1.  Compatibility

                         2.  Don't see much competition in U.S.
                         supercomputer market

                         3.  Stability

                         4.  Price/performance
308 Gov NASA/Am RB    99 Would rather not discuss.
302 Gov NASA/Am-GL     1 No close competitors; CYBER 205 is a "poor
                         cousin in comparison", needs some
                         competition (price might come down or
                         performance might go up.)
123 Gov NCAR           1 Cray has fastest proven machine.  No other
                         choices today, except risking it with ETA.
206 Gov NCI - CC       1 We've spent much time optimizing, programs
                         on the CRAY.  It would  be tough to do for
                         another machine.
202 Gov NCI - JM       3 Always have to consider all options.

307 Gov NRL - DG       1 Comapatibility, if no restrictions on her,
                         she would buy CRAY.  No area is downright
                         horrible, no heartburn about buying CRAY.
111 Gov Oak Ridge      1 CRI demonstrated performance.
309 Gov Sandia -CA     3 "Would consider CRAY very favorably;
                         however, it is open to competitive bidding."
125 Gov Sandia -NM     1 We would have to go out for competitive
                         bids.  We'd like to buy from Cray, with
                         their experience and installed base.  We
                         would, however, have to look out ETA, etc.
131 Gov Unisys         1 Stability of company, level of support,
                         continual product improvement.
209 Gov Univ. IL       1 Great bang for buck!
305 Gov Wright-Pat     1 - Leader in the industry

                         - Less risk using CRAY than other cpu's

                         - Has software and support services in place
```

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                  Cray Customer Satisfaction Survey
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                  Q27:  Other comments & suggestions


 ### Comments
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** Question # 01
 109 All answers related to XMP/24U, unless otherwise noted.
 115 Cray is subcontracter to UNISYS, so some issues covered by this
     survey might be shielded from us.
 313 Although Westinghouse has 2 Cray 1S, characteristics are very
     similar.
```

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

Comments

** Question # 01a
107 1a) First UNICOS user in country.
101 INPUT note: Customer said 12-81, CRI records say 12-82.
109 Operated as a unit processor.
123 Answers refer to both the XMP and the 1A unless otherwise specified.
131 Getting Cray2 in September.

We must have best Cray1 in the world. (100% uptime past 5 months)

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                  Cray Customer Satisfaction Survey
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                  Q27:  Other comments & suggestions


 ### Comments
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** Question # 01c
 310 Runs COS 1.15 on 3 processors; UNICOS 2.1 on 1 processor.  To go
     to UNICOS on all 4 processors.  Has a Cray-2 on order.
 207 UNICOS = day shift, COS = night shift, switching to UNICOS.
 118 Bell labs runs UNICOS part of the time and COS the remainder.
     Interview #117 is from UNICOS users, this interview is for COS
     unless otherwise specified.

     Goal was to drop COS by 11/86.
 117 P. Nelson customers going on COS, we have modified 2.0.
 126 As of this week, we've installed release 115.
 214 Intend to put UNIX.
```

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                    Cray Customer Satisfaction Survey
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                    Q27:  Other comments & suggestions


### Comments
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** Question # 01d
107 1d) Heavily time critical.  To shorten product to market time is
       main reason Cray system acquired.
108 1d) 90% = production, 10% - research
101 Also does much production work.
207 Almost exactly 50/50 production/research.
211 Process seismic data to find
212 Leaning toward production in late '87.
214 50/50 both.
128 We have time critical research.
130 LCC = Production, MFE = research. (BB)
```

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                  Cray Customer Satisfaction Survey
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                  Q27:  Other comments & suggestions


 ### Comments
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** Question # 01e
 108 1e) High rating or availability of design automation software for
         integrated circuits.
```

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                  Cray Customer Satisfaction Survey
                  ---- -------- ------------ ------

                  Q27:  Other comments & suggestions


### Comments
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** Question # 02
103 Cray cost is so enormous, must examine closely.  I'm being judged
    on cost effectiveness.  Cray is not that good.  We have had
    hardware problems due to electrostatic discharge.  Downtime early
    1987=much.
113 I wear 3 hats, I chair the user group, I have my own application
    (largest use of Cray), and my department.
120 My backround is from the industrial section (scientific computing
    management at Gulf), however, my rating on this question is from
    the viewpoint of the supercomputing center.
```

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                        Cray Customer Satisfaction Survey
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                        Q27:  Other comments & suggestions


### Comments
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** Question # 02a
204 2a) Cost performance would be even higher.
101 "Performance", interpreted as now fast system does calculations.
105 We dictated by deadlines, very time critical applications.
205 Setting up a 'production' center.  Would like to go research
    intensive.
206 2 or 3 months uptime with no downtime.
128 Performance = number of cycles that can be put on users job.
    Highest priority to use speed.
129 We do our own.
```

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 02b

203 Can stand downtime, don't like it. Definetely go performance over reliability.
201 Reliability of peripherals. Hardware reliability very important. Lost 8 disks to head crashes in 3 days!
105 We have unique configuration.
113 As long as its not rediculous.
123 We wouldn't have bought a Cray if hardware reliability had been a very important criteria.

119 Even though Cray system is less reliable we still get more work from it than other systems. There is no competition that is more reliable than Cray. We don't have any formal decision criteria for reliability for supercomputers, although we do for large IBM mainframes.
117 Must be a certain minimal capability.
131 This performance was key to getting a Cray 2
129 We do our own.
130 Cray doesn't do well regarding reliability. (BB)

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 02c

203 Not much system s/w support from Cray, would like more. No training from Cray on system s/w.

101 Most of all wants systems software that works everyday. System software has a very high importance, but is difficult to separate out specific aspects. Raw speed without system software reliability is not much use. Reliability and system software is more important than the last MIP that can be squeezed out of the machine.

201 Excellent support.

105 We compete with firms who charge much less than we do.

205 Rates a 10, but we have an 8, been pleased with h/w.

118 Operating system training = 2, Languages = 5. We can compensate ourselves.

117 Assumes supercomputer will have UNIX.

131 Cray is primarily a hardware company.

128 Cray's software stinks. Likely will write an operating system spec. for the next supercomputer.

129 We do our own.

130 Operating systems only for this evaluation. Compilers = 8. (RB)

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 02d

101 System software that has a practical functionality is very important (a "9"). I am not interested in non-practical system software features. Unless the system software functions help me run my business better, I'm not interested.

110 Cray is heavy hitter in the computer business, so we accept lower functionality of system software. If Cray has significant competition, then we wouldn't accept their lower system software functionality.

205 The functionality of COS is so good, Cray is abandoning it. It's a total compromise. We had a better O.S. 10 years. COS is a yesteryear O.S.

123 Keep the operating system simple.

117 We could be self-sufficient if need be.

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                  Cray Customer Satisfaction Survey
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                  Q27:  Other comments & suggestions


 ### Comments
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** Question # 02e
 110 Value is conversion of application software.
 205 One of the reasons we went with Cray.
 309 They write their own application software.
 311 They write their own application software.
 212 Do almost all development in-house.
 130 MFE = G, LCC = 3
```

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                         Cray Customer Satisfaction Survey
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                         Q27:  Other comments & suggestions


 ### Comments
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** Question # 02f
 110 Same as 2d, however, if buying many Crays this is a different
     issue.  Cray viewed as whipped cream on top of the sundae - it's
     not the majority of the computing, but it's nice to have.

     Cray cannot compete with IBM unless they are much better
     (speed-wise) than IBM.  Cray is selling the sable fur coat, not
     the overcoat.

     If Cray had good applications software would make a positive
     difference in decision.  But don't see how Cray can both build
     the fastest hardware and take the time to offer applications on a
     architecture that will soon be superceded.

     When Cray starts selling to banks and insurance, they will be in
     trouble because IBM will not tolerate Cray's intrusion into a
     market where they (IBM) are dominate.
 117 Assumes system supports our language.
 124 Users usually willing to do what they have to - to use a
     supercomputer.
 128 Willingness to tolerate conversion costs is a function of speed
     we are getting.  If it is twice as fast, conversion ease = "10"
     If system = 10x as fast, rating = "3"
```

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                  Cray Customer Satisfaction Survey
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                  Q27:  Other comments & suggestions


 ### Comments
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** Question # 02g
 110 Price becomes a big issue if competitors are close in value.
 131 Must look at price performance.
 128 This rating is for shock valve.  We don't want Cray to rape us
     regarding price.
```

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 03a

103 IBM is so much better than CRI. One CRI VP made some commitment to GD-VP that still has not been delivered. We are dissappointed in CRI. We probably should have bought a smaller size Cray to begin with.

304 Would like less expensive upgrades of hardware, reasons: signature authority; the attention attracted by an $8-$10 million expenditure.

302 Narrow usage of Cray's at Ames-Computational Fluid Dynamics (wind tunnel simulation; jet engine simulation; atmosphere! ocean). Needs: power--"overwhelming need."

114 If doing research processing, you can take more risk with a vendor. If you do production processing, vendor long term business viability is much more important.

123 Approval by the 1500 member user community of a supercomputer is a major undertaking.

115 Application software must be written in standard ANSI FORTRAN. We rely heavily on Cray's FORTRAN.

209 Chose Cray because of their reputation.

124 Very interested in COS to UNICOS compatibility. (GS)

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                         Cray Customer Satisfaction Survey
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                         Q27:  Other comments & suggestions


 ### Comments
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** Question # 03b
 105 have old 80 Megasute expander channel disk - it's terrible.  Tape

     drive is worthless.  When first sold us $10 million computer, CRI
     gave us a $10 million tape drive.
 208 Must be competitive.
```

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                     Cray Customer Satisfaction Survey
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                     Q27:  Other comments & suggestions


 ### Comments
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** Question # 03d
 313 Repair time is OK, given the nature of the Cray 1/S.
```

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 04

107 4) System used interactively. 5 percent of the cycles used. A single user could use 100% of cycles while they are on. Available = 24 hours, at least one user on 12 hours. Usage = 1 to 15 users at one time.

108 4) 30-50%, 24 hours per day, 7 days per week.

203 Virtually no idle time.

202 Uptime: 9.6. environment
99.97 H/W
99.96 S/W
Meantime to interuption: 1092 hours, H/W
182 hours, S/W

202 Utilization: 91.1% CPU, 72.1% memory

301 Installed in November, availability/utilization would be 10% since November, promoting use of Cray in February/March. Utilization rises to 40% since then.

104 Last month was 75%, utilization is increasing.

109 Utilization difficult to define. We seek 98% service level with one day turn for 19 out of 20 days.

109 Since 1-1-87, 1S was very stable. XMP had some bad boards.

310 85% utilization on 4 processors, 24 hours a day. Cray told them they were fastest site to be up and running.

207 3/1 = production mode. Users are in conversions right now.

122 Ours is a very new system. Just upgraded system last month. Too soon to tell.

118 Daytime = 25%, nightime = 100%

117 For UNICOS side = 50%

209 Very happy with 80% utilization.

124 Usage growing.

125 1S = 80%

131 Can't divulege. Availability when needed is the key, more than 67% utilization, however, interviewed selected 85% as estimated (halfway between 67% and 100%)

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                    Cray Customer Satisfaction Survey
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                    Q27:  Other comments & suggestions


 ### Comments
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** Question # 05
 109 At or below our expectations we don't worry about it much.
 205 Job recovery procedure needs improvement, when 40 hours of a 48
     hour job gets bombed!

 306 Number of interruptions is very minimal.
 208 30 problems with memory in one month!  All memory chips were
     swapped out.
 113 Have only had 3-4 system interruptions in the past year.  Our
     Cray has been rock solid.
 122 System too new to analyze frequency of interruptions.
 119 Experiencing more interruptions than we expected and are getting
     more than we got on our M system during its last 6 months.  We
     had 30 hours of unscheduled downtime in 1st quarter of 1987.
 118 For COS = 2 a month, UNICOS = 5 a day, (all software caused,
     mostly environment)
 117 Numerous UNIX interruptions.  I view PM as a hardware
     interruption. (PW)  Had one disk failure plus power hits since
     1/87.

     These CRI CE guys really care about the machine.  They are
     amazing.
 209 He keeps very good statistics on uptime.
 212 IOP3 halts, we get 1 or 2 a day.
 125 1S = 17 interruptions a month, 60% = hardware, 30% = software,
     10% = other.
 128 Newer machines are crummy.  MTTF = 100 to 200 hours/system.
 130 MTTF = 100-200 hours.  C2 has been poor. (BB)
 130 Approaches 100% with age. (PD)

     IOP has 1 to 2 interruptions per week. (PD)
```

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 05a

110 Especially disks.
206 Very unbelievable uptime. Could not be possibly better.
123 We have the second worst XMP, in terms of failures, in the world. The worst is in France. We change software often, this brings system down.

Cray 1A = 5 interruptions a month, 60% = hardware, 40% software.
126 Includes Cray CPU plus interface boxes to other equipment.
130 XMP and newer machines shown older systems got to 100% hardware.

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                   Cray Customer Satisfaction Survey
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                   Q27:  Other comments & suggestions


 ### Comments
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** Question # 05b
 203 Very pleased.
 114 Half were necessary FORD developed mods due to lack of software
     functionality, especially in the area of large file management.
     (i.e. 100 gigabutes, 7000 files, 16g=on-line.)
```

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                  Cray Customer Satisfaction Survey
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                  Q27:  Other comments & suggestions


 ### Comments
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** Question # 05c
 104 Chiller Failure.
 128 "Other" includes network.
```

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                   Cray Customer Satisfaction Survey
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                   Q27:  Other comments & suggestions


 ### Comments
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** Question # 06a
 110 Not complaining.
 120 Don't know, but haven't heard anything to cause me to worry.
```

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 06b
110 Range = 60-120 minutes, not complaining.
208 Always get what's contracted for -2 hours.

211 24 hour on-site coverage.
213 They've always beat what's on the contract.
126 They are very good.
130 We have a very responsive CE crew - maybe one of the best in Cray's empire. (PD)

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

###	Comments
** Question # 07	
204	7) It's a problem. Design errors in their Cray2. Cray has been 'pretty good' about it, but it could be better. A spirit of cooperation with Cray is great.
104	Longest downtime = all day. Minimum - 1.5 hours. Had a problem with DD39 - took couple of months to fix (happened at first of year). Wish CRI expertise in this area had been higher. We only gave them their regular PM time to fix, however, which thus prolonged repair time.
106	Had remarkably trouble free CPU. Had some disk and power distribution problems.
105	Two classes: 1) can fix right away = 45 minutes 2) hard problem - 2 or more items fail at once, takes 180 minutes frequency of type is once per 3 months 5% of time.
109	Don't have many problems as a result our averages don't mean much.
205	It takes days to get DASD replacement parts. Very bad. One time we had to wait 2 days to ship, the HDA in environment, then install, almost a week.
310	"Average is meaningless" since problems have ranged from 1 to 8 hours to repair.
118	Generally CE's very efficient.
116	If CPU = under 1 hour. If disks, within 24 hours.
209	'Oh God', it's terrible. Way too long!
211	Much too long, but should take less time. This indicates a problem.
212	Ranges from 2 hours to 12 hours.
213	1 to 6 hours.
124	One time it took 23 hours, made us very unhappy. (GS) CRI didn't use escalation procedures properly. If problem identification is not straight forward, it takes CRI exponentidly longer, CRI seems indecisive.
125	Depends on the problem, ranges from a few minutes to several hours. Escalation process seldom used (no more than once per month).

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

###	Comments
131	Depends on where the problem is, Cray has been very responsive to us. CE's are dedicated. Having fastest computer in the world is only effective when it runs.
128	36 minutes does not include disks.
129	Diagnostics are so bad, wrong fix is made. This is extremeley frustrating. Many problems come and go over a couple of days before they can be diagnosed and really fixed. Some are easily found (single bit memory errors.) This is done in a few minutes, except C2 takes an hour.
130	Disk drives = 4 days, mainframe = 1-2 hours. Time to diagnose is a lengthy period of time which Cray never shows in their slides. (PD)

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                    Cray Customer Satisfaction Survey
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                    Q27:  Other comments & suggestions


 ### Comments
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** Question # 08a
 101 Cray people are responsive when a maintenance problem occurs, but
     I am not satisfied with Cray's overall system reliability.
 103 Frequency of failure is too high.
 104 Five months ago would said a "5", (IOP business leads problem.)
 303 The number of hardware incidents is too high, if the system is
     used for batch processing, then this is not a problem, but since
     future Cray OS's will be interactive, then the CPU/system cannot
     be down every day.
 123 C1 = 9 rating, we are willing to suffer unreliability to get
     performance.
 122 Reliability is not what is should be, but we are in a
     stabilization period since the system was recently installed.
     Actual reliability is less than my expectations.
 119 Is not as good as our M system, yet Cray salesperson told us XMP
     would be more reliable.
 115 Outstanding, but not perfect.
 212 Not really excited about the reliability.  IBM systems up a lot
     more.
 127 Depends who you ask. (AL)  Disagreement exists.
     Billings haven't covered costs.
 125 1S = 7
 126 Cray probably has the longest mean time to failure when compared
     to other large seale computers.
 128 Have had one XMP 90 for 350 hours MTTF.  This is, unfortunately,
     an exception.  Trend is up, however, regarding reliability of all
     machines.
 127 Cray not as reliable as non-supercomputers.  Cray does not have
     alot of error recovery built in.
 121 Several problems with Vector registers plus SSD problems.
 130 Crays got a problem in reliability area. (BB)
 130 PD, DF rate hardware reliability a "7" and peripheral reliability
     a "6".
```

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

###	Comments
** Question # 08b	
108	8b) DG machine and associated drive problems brings down ratings.
203	DD49 known to have problems, and they do. Performance when they do. Work is outstanding.
106	"6" rating during the past year, "9" rating for now, average = 8.
205	Disks poor, new DD40 should fix. We understand why there are problems, it's a leading edge technology. Pushing physical limits.
308	Disks, with moving parts, are the weakest link in the system. However, Cray has provided 2 back-up disks on site.
305	Very few hardware problems. Some disk problems.
302	Not enough parts to fix disk drives! They maintain 1 extra drive (free) to backup 16 drives.
310	Problem is IBM tape drives, not Cray hardware.
309	Problem disk drives. However, they're adding: hardware monitors, a system to keep dust out of the disk drives.
111	Having DD29 problems recently.
208	DD49 - not happy at all - not very stable. When you include memory problems, the # goes way down.
113	When we had DD29's, was a disaster. Now that we have different drives, things are fine.
123	Peripherals are the weak link in the Cray system.
122	Expect it to be high as equipment is new.
120	Several outage problems on DD49, prior to last quarter, the fact that Cray gives us two extra drives is an indication of how Cray views DD49 reliability.
118	Better than had expected.
117	Excludes hyperchannel. Expander printers and tape drives are next in rank to junk. They are antiquated.
313	Disk drive reliability isn't too good.
311	Disk drives are problem.
124	Haven't fixed expander tape drive for six months. (GS) Disk units falling apart after two years. (GS)
125	1S =7
126	We have our share of disk problems. At anyone point in time we have at least one disk spindle down. (DD39)

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

###	Comments
131	Disk problems (not Cray's fault).
128	Still having disk problems we shouldn't be having. IBM 3380's run a year, in contrast.
127	Use DD49

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                     Cray Customer Satisfaction Survey
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                     Q27:  Other comments & suggestions


 ### Comments
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** Question # 08c
 103 CRI uses fault isolation approach - i.e. replacing of cards.
     That approach stinks in the airplane business.  Need tests.
 114 CRI people and management give us impression they really care
     about the system - it is viewed by them as a mission, not a job.
     This is in contrast to other vendors. (BH)

     Impression is that diagnostics leave alot to be desired. (BH)
 124 Escalation response time = 2.  (Initial response time = 9)
 125 1S = 10
 125 Time is very much a function of the person in charge of the site,
     and the regional person in charge of site people.  Right now I'm
     satisfied with the first three levels of CE at this site.  They
     are responsive.
 128 Repair time for disks is much greater than for the mainframe.
 130 Most important is to minimize interruptions. (PD)
 130 Bob Borchers rates hardware maintenance response and repair time
     a "7".
```

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                         Cray Customer Satisfaction Survey
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                         Q27:  Other comments & suggestions


 ### Comments
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** Question # 08d
 104 Could be improved with more training on specific devices.
 111 CRI CE's very thorough.
 209 They always have to bring out ITS people out here, it takes too
     long.

     I.O.S. reliability = 2, very poor, very upset about it.
 125 1S = 8
 126 Disk downtime pulls this rating down, otherwise would have been a
     "9".
 128 Getting better with DD49's.
```

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 09

107 9) Much problems on UNICOS regards diagnostics tools - many not usable.

204 9) Trend is getting better than a 5, effort by Cray being seen.
203 Every vendor has problems with this.
202 Very good.
101 CRI has inadequate tools compared to other vendors.
106 Very impressed with testing done during move = 8, diagnostics weak with non-CRI peripherals tape.
201 System up almost 100%, rarely down.
205 Better diagnostics than most folks.
308 Cray-2 Needs:

- parity on Vector units
- error checking
- performance monitoring hardware/software

Time relation problem. Diagnostics do not do well to solve this problem.
303 Diagnostics are hit & miss; they may or may not tell the F.E. where the problem is.
302 Not used much, machine is very reliable.
310 Recent incident: A problem was not found for 5 hours since the correct diagnostics did not run. Admitted this may be a user problem.
306 Need to upgrade the diagnostics. Their load mix is changing and will need different diagnostics.
207 Problems have been resolved very fast. Having problems with station software to VAX.
208 'Adequate' - lots of room for improvement. Find real cause of problem, fix problem not symptoms.
313 "They have been telling us for 4 years that they will have concurrent diagnostics. Nothing yet, still must take the CPU done to run full diagnostics."
209 Horrible diagnostics. 'God awful', I say so, even their own engineers say so!

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

###	Comments
211	Could be part of the problem. Not sure engineers know how to use diagnostics in all places. Get results from diagnostics, you need familiarity with the diagnostics procedures.
212	Same problems have been happening for months, diagnostics don't point to right things.
213	Problems with COS scheduler. (but now a dead issue)
124	When work, they work average, often they don't work.
125	Software diagnostics leave something to be desired.
128	Combination of built in hardware aids and software tools.
130	Last two really nasty problems we had, Cray's diagnostics didn't find. (XMP, C2) (BB)

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 10
202 Very satisfied with the H/W: Keep the developments coming.
308 Cray has signed up for a given response time. Parts availability is essentially Cray's problem.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 10a
204 10a) They fit the bill, 'They're OK'.
114 On memory upgrade CRI appreciated its importance to us and responded appropriately.
123 They are very good to work with.
115 Cray person flew in to advise us concerning sediment in chilled water. We were disappointed that Cray "expert" couldn't offer solutions or suggestions, he just confirmed that we had a problem which we already knew.
311 Installation and documentation for hardware handled through ZERO-ONE, no response.
210 Excellent job at pre-installation consulting.
126 Based on my best recollection, I wasn't involved directly.

112 DR was around, but not heavily involved. (DR)
130 Must be OK, pipes. (BB)

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 10b

101 Installation documentation is OK, but operating system hardware diagnostics are poor.
205 He wants to know what is happening in each module, He can't have schematics. Willing to sign non-disclosures, he can't take course that Cray engineers take.
206 General feel doesn't seem right.
302 New releases are still "patchy" & inaccurate. But better than it was.
122 It is not clear to me how well defined escalation procedures are. Had some difficulty getting Cray to recognize that we had a critical problem and thus they should employ the procedures. (This was on the 1S spring of 1986 during a 3 month period of hardware difficulty.)
117 Rating is in respect to their use for oper. system design, etc.
117 Rating is in respect to their use for operation system design, etc.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 10c

204 10c) Waiting for weeks on a disk drive. Modules had no spares when needed. 4 processor machine has saved problems, but could stand lots of improvement.

205 Cray mainframe hardware = 10, spare DD49 = 10, HDA only = 4
303 Spares for disks and F/E channel cards-must wait several months for spares.
111 Had one problem recently which was a complete misunderstanding between a CRI CE and his supervisor regarding platters. Ron Todd was not pleased with this situation.
208 "Very 'pitifull' on DASD."
113 Sometimes this is troublesome, have had situtations where we had to wait 2 to 3 days when motor generator burned out.
115 Due to high reliability of system, haven't had any reason to be disappointed.
209 HDA's for the DD49 availability is exceedingly poor.
212 We had only 1 problem, but it got worked out.
124 Cables are bad in terms of availability.
128 For mainframe = 9, for disks = 4.
129 Non Cray 2 = "9"

Q27: Other comments & suggestions

### Comments

** Question # 10d

204 10d) Historically been bad. Lately, CRAY has focused on it, and its been an improvement. Expect it to be a better number in near future.

203 By far the best maintenance organization he has dealt with (over 20 years).

103 CRI people won't bring others in when they should. They tend to treat our serious problems as less serious. In January they kicked a customer of ours off all night, caused us much problems.

106 Has improved since last year.

105 Problem = procedures not strict enough = "6", but they aren't followed = "3". We have to tell them when to escalate.

208 Very happy. Went to corporate quick!

115 Never had to use as far as we know.

116 Never tested, or else is transparent to us.

311 Escalation procedures - "you only know it doesn't work when you really need it. But, we've had good uptime."

209 Terrible, it's been bad, but its getting better.

124 CRI needs to learn how to implement the procedures. Commitment of local CE manager is lacking regarding the escalation procedures. CRI was having a regional CE meeting just when we needed them. (JL)

125 Some guys tend to get a little proud and hesitate to ask for help.

214 New procedure in the works which should.

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                  Cray Customer Satisfaction Survey
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                  Q27:  Other comments & suggestions


### Comments
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** Question # 10e
204 10e) Could do things better.  Part of the escalation problems,
         improvements have been made.
103 We've gone through six people.  It appears CRI hires off the
    street.  Rating varies by person.  Current person, who is
    temporary, seems good.
104 Whatever they lack in skill they make up for in dedication.
201 Don't care who's at fault, just want it covered.  Swapped out
    memory and he didn't even know there was a problem.
111 CRI has the best CE's in the shop.
306 High analyst turnover; not particularly skilled analysts on-site.
208
208 He should get more training in DASD.
113 This rating is a fuzzy impression, I'm not around them much.
114 All are competent - would not be afraid to turn computer over to
    them. (NS)
118 Less than saw a couple of years ago.
124 CE lacks tools to do a good job.
128 We've had a major change in EIC.  Six months ago satisfaction was
    much lower.  We are happier now, things are improving.  (New boss
    and some new people)
129 Non Cray 2 = 7.
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                  Cray Customer Satisfaction Survey
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                  Q27:  Other comments & suggestions


 ### Comments
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** Question # 10f
 101 Good, but seldom here.  Want this message to get to Cray loud and
     clear:  Like fast boxes but want them to work most of the time.
 103 Some = good, some not.  Jim Matosh not have much contact with
     them.
 205 Very good people.
 310 No experience with regional headquarters hardware support
     personnel.
 311 Field tech. support, hard to get to the expert/analyst you need
     at Mendota.
 211 Do adequate (then he said 'good') job.  Diagnostics leads to low
     rating.  CE's not as acquainted with diagnostics.  Room for
     improvement.  Overall, very satisfied.
 121 Low interaction with CE's.
 130 Field people not as good as Minneapolis people, but they should
     be.  Field people are green. (PD)
```

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 11

106 Have UNICOS, but haven't had enough experience to rate it. COS 116 has been spectacular, but past record has been poor. Must wait and see.

112 PASCAL not really in use yet. (DR)

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

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### Comments
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** Question # 12
 105 Never hear what happens to our requests.
 109 Station person.
 307 PASCAL & "C" are seldom used.
 114 Of about 10 SPRS submitted, only 2 have been resolved. (NS)
 211 Cray not responsible for COS.  Cray supports our people.  Cray
     wants it to be the other way around.

     Cray needs to work with us.  We're responsible.  It's our heads
     on the block.
 212 Not really sure, someone else takes care of it.
```

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 12a

108 12a) COS: Don't recall any critical problems. FORTRAN: CRI people quickly developed workaround solution. Quality of C and PASCAL leads alot to be desired.

302 FORTRAN is very important and is well supported, may take 2 weeks to determine that the problem is with the FORTRAN optimizer.

207 They've been very responsive. Responsive across the board.

114 During on-site time, response is immediately, if off-site, takes maybe 2 hours. Critical problems don't happen that much.

114 Have multiple compilers, if have problem we go back to compiler that works.

123 C: We don't use much. STATION: we modified extensively.

122 STATION: Had a recent problem with getting fast station software support response for a NOS system - test bed is in Germany. Local Cray analyst might look at problems quickly, but they don't have enough station expertise to be of much help. FORTRAN: has been pretty stable.

120 "C" compiler, I hear, performs poorly. We always report problems through Westinghouse.

118 COS has been reliable, much problems with UNICOS.

115 Not aware of software resolution times. Have not heard of any problems in terms of resolution time.

116 FORTRAN: never had a problem.

117 If we find a specific bug, usually fixed within 6 months. If we find design problems, some never get included in future releases. (DR)

If it is a serious problem, CRI willing to send someone to us. (DR) Sometimes helps, sometimes not. It may happen that the problem originated with our modifications.

We have a general dissatisfaction with UNIX support (DR) (PW). We get a tape (e.g. UNICOS 2.0) and it won't work.

On the whole we feel UNICOS 2.0 is not a quality product and support is not good. (PW)

Installation procedures getting better but CRI "is still practicing." System works best with CRI customers who have environments similar to CRI HQ environments.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

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### Comments
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128 FORTRAN: We don't log these items.
127 Local response is instantaneous.
129 We run CFT update.
130 We maintain our own compilers so we can fix them faster. (BB)
130 FORTRAN: Local people jump on it right away. (PD)
```

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                         Cray Customer Satisfaction Survey
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                         Q27:  Other comments & suggestions


 ### Comments
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** Question # 12b
 202 If we have to go outside our environment to solve non-critical
     problems, it could take days-weeks-months.  Very satisfied with
     response for critical h/w, s/w problems, but Cray could do better
     in the non-critical area.
 113 If our problem is fixed in the new release, oftentimes one
     problem is substituted for another and the total number of
     problems increased.

     Things have been relatively stable recently with 115, however,
     the FORTRAN people's negative attitude has not changed one bit.
 114 On non-critical problems we are less satisfied.  SPR generation
     is done only by CRI person, have had numerous occasions when
     we've identified problems but never hear back from Cray analyst
     on status.

     CRI should install a policy that allows customers to submit
     problems themselves.  Review problem histories on-line, and track
     status.  Many other vendors do this.

     Would like to receive monthly reports on problem solutions.
 116 CTSS = non-issue, we have on-going conversations with them,
     things get resolved.
```

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 13

203 Size of CTSS support staff.

202 Resolution of problems weak in S/W. Chain of informational specialists not well defined. Hard for local person to find the correct Cray expert to solve the problems.

102 Mendota Heights takes advantage of the full six months to respond. JES3 Station s/w person at CRI sometimes not available, average = 2 day.

104 FORTRAN & COS) critical problems = 2 days, non-critical = 3 months. Getting major bug fixes in a new release takes a long time, length of time is too long. Station takes even longer to get a new release.

106 Rating is for Mendota Heights.

105 Don't know, as problems are sent to CRI and never reported back to us regards status.

Have impression that if a CRI sale depends on a software fix or capability, CRI will respond rapidly. If it is a customer with a problem it takes a long time. Seems like CRI software people are in place to support hardware sales instead of existing customers.

308 They have Cray-2 with serial number 002; and have received excellent support since Cray sends best-trained technicians.

118 On-site person will fix.

117 CRI had a series of buggy FORTRANS.

Until a month ago the only FORTRAN compiler available for UNICOS was quite buggy. This is hard to understand, given that CRI has been working on this same compiler for years. (PW)

We have learned recently to pay more attention to SPR's as it is important to establish a written, documented record.

Sometimes CRI FORTRAN "solved" a problem by telling us to change our program. This is not really satisfactory to us, as many of our programs are generated by other programs and are widely used. Anything that makes the Cray hard to use is bad for Cray, as users go elsewhere since much competition exists now for alternatives to using a Cray.

There are a number of FORTRAN useability features for debugging that are dismal (e.g. trace back gives Octal line numbers that, in addition may be incorrect.) One problem area (if you open a file to only read it, the system deleted it.) was in place for a year before it was fixed. This was irritating especially since for awhile CRI claimed this was the way it should be!

"C" comments:

CRI is currently implementing an obsolete dialect of "C." We have sent actual code for fixes to CRI, but haven't seen them in the next release. (e.g. old fashioned assignment operators)

There are things in the compiler that prevent acceptance of good program lines.

CRI has been responsive on some longer range issues. (e.g. FORTRAN and C interaction)

Seems to be enormous time gap (6 months) between releases, and then releases are not what we'd hoped for.

Also is a six month gap between being told something is fixed and time it is actually released.

It is not useful for us to fix compiler bugs ourselves. Bell labs is attempting to get themselves into more of a standard compiler environment.

Compiler performance is completely unacceptable (In terms of CPU resources) it is absurb. It is mainly the fault of CRI assembler.

"C" compiler runs ten times faster on Bell Labs VAX's than Cray! This is really awful, unbelievable. "C" development environment is really poor. We are getting message back from CRI that this is OK as it uses Cray cycles. (We don't concur with this attitude)

Q27: Other comments & suggestions

###	Comments
311	Non-critical problems with software are typically addressed in next release/update.
210	The Cray people really care.
214	They are good with working with us.
112	Not many instances of critical problems. (DR)

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 13a

107 13a) Lack of critical problems - UNICOS.

108 13a) FORTRAN: CRI developed satisfactory workaround in days. Takes Mendota Heights months to fix after that.

204 Much too long.

110 We try to have a big involvement in COS with our people, we are deeper into Cray software than most people.

If problem is critical we would always get involved heavily. If needed a Cray fix on a critical problem Cray usually responds within 48 hours.

205 We had a critical problem not solved for months.

207 Response has been excellent.

113 If it's a known problem we get a fix in a couple of days, if it is unknown, takes months to resolve. Cray has been good in bringing in people to our site to develop fixes. It's a problem to get CRI to acknowledge that it's really a problem - burden of proof is on us. Takes time to go through this. Cray is, however, marginally better than IBM. However, CRI software peoples attitude is that it must be your problem, mine works fine.

We have an automatic fallback policy whereby if we have a software problem that keeps Cray's down, we roll back to previous release.

114 COS: A workaround = 3-4 hours, permanent fix = 3-7 days.

123 COS: NCAR programmers will often try to fix the problem.

FORTRAN: We have Cray FORTRAN programmer on-site half the time. usually he will devise workaround in an hour. Final fix from Cray HQ takes days to a month longer.

122 I don't see visibility of problems unless they are very critical. Once workaround is in place I lose track of resolution time.

119 COS: Non-critical problems: minimum = 30 days, maximum of "never" (Cray won't fix it)

124 FORTRAN: CRI ships code they've never tried. (JL)

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

Comments

126 Our experience has been mostly with known problems that Cray has encountered before. Solutions are readily available.

127 COS: 1 week to 3 months to never to repair, depending on the problem. Average repair time = 2 months. FORTRAN: One example of critical problem took 2 weeks to solve. We had to use a previous version (Vectorization issue) in the meantime.

129 Depends on size of problem. If it is a smaller problem, it takes 2 weeks to 2 months to fix (average one month on smaller problems), but don't receive until next release.

130 FORTRAN: Takes way too long. (DF)

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                        Cray Customer Satisfaction Survey
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                        Q27:  Other comments & suggestions


 ### Comments
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** Question # 13b
 107 13b) 180 days for C - need better C compiler.
 109 Often have to wait 6 months, in one case had to return to a
     previous release (3.02) in order to operate.  Had 3.03 up prior
     to that.
 206 They do alright, not really a problem.
 114 Takes until next release to resolve.
 123 COS:  Usually fixed in the next version, released every 6 months.
 118 Often UNICOS fix doesn't work.
 124 COS: takes a long time, this is a problem area. (AS)
 125 Effort is applied.  CRI putting out FORTRAN releases that are not
     adequately tested before being sent to field.
```

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 14

118 FORTRAN, ever since rel. 112, reliability has gone down. We spend enormous amount of time trying to resolve.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 14a

102 IOS = 1, COS = 5, average = 2

103 COS only write single file to tape. CRI trying to push UNICOS, but COS should work. CRI is like CDC, they are not a very good software house. CRI not good.

106 Not fair to evaluate UNICOS - too new.

110 FORTRAN release didn't work as well as should have. We wouldn't put up into production. This is a problem when we're looking for oil.

308 Poor recovery of UNICOS for Cray-2.

302 FORTRAN reliability: "comes & goes"; keep changing the optimizer; 1.15 is unsatisfactory. Seldom uses PASCAL.

309 No Cray support for CTSS. "How can you be satisfied with something you don't get support for?"

113 I sense an actual beligerence in the Cray FORTRAN people's attitude to us. In contrast COS software people are nicer - they listen to you. FORTRAN people at Cray have a general arrogance about their system. They are resistant to improving FORTRAN with our suggestions. In CUG meetings they are borderline insulting. They say our reports are so stupid and we shouldn't want what we are requesting. I'm really down on the attitude of Cray FORTRAN people. It is difficult to get them to listen.

Our only real complaint with Cray is in this area of their FORTRAN people's attitude.

Version 112, 113 were very bad, version 114 was better and 115 even better. But they don't address the ease of use issues we think are important.

We have to keep numerous back level versions of compilers available on the system so that the users codes could keep working. This is unacceptable.

114 COS version 115 more reliable than version 114, but still has problems.

123 C1 = 8, XMP = 7

C: "3" rating (based on a small sample) was new software several months ago, was not stable, it was raw.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

###	Comments
120	I personally think Cray systems software is dismal. I consider usability of systems software to be a very important decision criteria, although the NSF users are less concerned about it. Users are tolerant of poor systems software because they want the Cray power, and Cray is only kid of the block. I believe this tolerance by users will quickly decrease in the next two years, expecially as UNIX becomes more available.
119	COS: Grumman seems to be a Beta test site for COS, but they haven't told us. (e.g. archiving features - can't believe it was tested.)
115	Had a problem in January, was an inconvenience as was an intermittant failure. Didn't stop our production, however, very pleased how fast Cray flew someone in to help fix it.
117	FORTRAN development environment is not what we like, but generated code goes very fast.
210	FORTRAN 1.15, still buggy.
125	See comment on #13b
126	Station: We've experienced half a dozen bugs or design deficiences in the past 9 months.
214	Overhead to protect the integrity of the system. 65% of O.S. is custom. They designed it to be in a lab, not production environment. If we didn't have our mods, we'd always be down. Compared to IBM, they're 15 years behind in recovery code. Cray is like a flea running up an elephant's leg. Computational ability of code is excellent, but error recovery is very primative. They don't have the most extensive diagnostics. They take a bit longer than you would expect.
131	PASCAL = 10
121	COS: Has many primative areas. FORTRAN: COS 115 recently installed along with CFT 115 BF1. Had many bugs - users complained. Discovered Cray had already released CFT 115 BF2, but no one knew about it. Why didn't we get it? BF2 has 100 more fixes to it than BF1. Somebody really screwed up. I'm really down on compiler development. Have not seen improvement with 115. Amazes me Cray allows this as FORTRAN is Cray's bread & butter. COS 115 is pretty well recognized by Cray as a disaster. Scientists and engineers have had two major FORTRAN's released by Cray with major problems. They are beginning to be concerned about the accuracy of their code output.

A big problem with COS Rel. 115 BF2 was in the assign statement in the I/O libraries. A change made by Cray, but was not noted in release documentation. This oversight caused us major problems with our users. If user hadn't done eyeball checking, would never had any problems.

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                        Cray Customer Satisfaction Survey
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                        Q27:  Other comments & suggestions


### Comments
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130 FORTRAN:  Japanese compilers are superior to Cray. (BB)
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Q27: Other comments & suggestions

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### Comments
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** Question # 14b
102 IOS = 3, COS = 7, average 5

106 Recent rating is for version 116.  Prior release had problems.
109 No big problem to us.
205 Every bug fix of FORTRAN has problems.  Takes Cray a month to
    fix.
113 Takes a long time to get Cray's attention.
123 FORTRAN: local person is being rated.
122 Hard to get quick resolution from Germany - based support.
119 COS: Repair time rating is for Minnesota.
118 Takes several months to fix FORTRAN.  We have few COS problems,
    many problems exist in COS that we just learn to live with, if
    filed bug report on some outstanding problems, it wouldn't be
    worth it as they'll never get fixed.
128 We find bugs no one has heard of.
128 FORTRANS: on-site analysts respond quickly (rating = 8)  Mendota
    response has been slow. (Rating = 3)
128 No support from CRI.
```

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 14c

203 Cray only supports a subset of CTSS, CTSS performance better than UNICOS, far better than COS. Good, active, supportive CTSS user group.

202 Apollo station S/W not much expertise in it. Don't expect lots of improvement in product.

102 IOS = 3, COS = 7, average 5
We had 42 outages in one month for IOS. System has been down for 3-4 days in past 6 months due to IOS.
Our fear is that there is ony one person in Mendota Heights, if truck hit that person we are dead. Situation is getting ridiculous - all CRI users use IOS.

123 FORTRAN: local workaround = 8, Cray HQ fixes to compilers = 5.

119 STATION: Had some fixes which didn't work, had to be refixed.

Having FORTRAN problems that gave wrong answers which was extremely unsettling to our users. We had two cases of it taking Cray a week to fix these problems. This length of time to fix was shocking to us. Did it take a Cray FORTRAN analyst a week to sort through code to find the "wrong answer" problem and fix it? This possibility causes us concern.

311 Problems are not always resolved, but short-term fix with workaround helps a great deal.

124 Liked CRI willingness to send people to us the next day if necessary.

128 CTSS: I/O subsystem software is terrible software (undocumented assembly language). CRI person working on this locally is very responsive, however, documentation on DRD debugger is terrible.

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                   Cray Customer Satisfaction Survey
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                   Q27:  Other comments & suggestions


 ### Comments
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** Question # 15
 311 "Not responsive" with escalation procedures in software group, at
     Cray.
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Q27: Other comments & suggestions

### Comments

** Question # 15a

107 15a) Had one bad UNICOS class, it was terrible. It was a UNICOS internals course (June-July 1986). Should have cancelled it, Cray was not ready for it. Wasted a week of our time taking the course.

104 Just having HQ training for FORTRAN is not adequate for our needs - we need field training. Mendota training = adequate. Regional training doesn't exist.

105 Sent two people two years ago.

205 Excellent! COS

302 Wants more detailed training on station.

120 I have three software analysts. One is good, one is fair, one is poor.

126 FORTRAN: Training dealt with too much theory, wanted more practical applications. Attendees were experienced programmers.

214 Don't know whether we trained them or they trained us.

121 COS: Too cookbook oriented not well related to our environment.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 15b

203 DOCS on CTSS weak.

303 "C" is not documented at all!

310 Documentation for UNICOS: Manual pages refer to pages in other manual which does not exist.

113 COS documentation is all there, but is a pain to read. Don't like the organization of the documentation. I rely instead on Cray on-site people.

STATION log on documentation is fuzzy.

114 COS documentation easy to read and is understandable. (NS)

123 COS: Users not overjoyed.

209 It doesn't exist. If you find it, tell me where it is.

125 Produced by the labs, not CRI as I understand it.

131 Cray is equal to our better than IBM regards documentation, and Cray is cheaper. Cray delivers documentation I need overnight.

131 Real rating = 12

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 15c
204 UNICOS - Do they have any? Not aware of it. Comfortable with how problems resolve. Not aware of formal escalation procedures.
202 It could go smoother.
102 For IOS we are not happy. COS is reasonable for escalation.
104 Not aware of escalation procedures.
105 Not aware they have any.
208 Escalation for STATION has been excellent since not much on-site support.
114 FORTRAN: Having to go back several versions is not an acceptabe answer.
119 Not aware of any escalation procedures.
118 Don't know what they are, not working well, can't find out who in charge at Cray.
212 They escalate OK, but resolution poor.
124 AIC seemed timid regarding submission of SPR's. We understand he was measured on these by CRI. This policy seems to be a negative incentive.

127 STATION: One problem never repaired (memory filled up on frontend, system crashed). (MVS)

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 15d

203 Works primarily with I/0 s/w, not CTSS. Treat CTSS community more seriously.
301 Cray's on-site software analyst rates an "11"!
103 Changed two to three times. CRI takes away the good ones. Part of CRI VP's commitment to us was to solve our software problems, we have been disappointed in results.
104 Couple of months ago was a "2". CRI got a new one for us. Wish analyst knew station.
105 Re: Station - local analysts confine themselves to COS and FORTRAN, they tend not to support station, even though we pay $3000 per month.
303 Has 3 on-site persons; 2 are very green; the 3rd just joined Cray. Hard to grow people from within given fast company growth.
114 COS: Our software analyst spends half his time at TANICOMM (?) site so is often not available to us. Seems as if CRI management is jerking him around alot.
119 STATION software is part of Cray software analyst's training.
117 On-site analysts beginning to get more involved.

We had been so pleased with Cray hardware, but were disappointed that the same quality doesn't exist for Cray software.

I'm quite disappointed in Cray software, it is below par when compared to others, such as DEC.
209 He's God's gift to us.
124 Average of all we've had = 7. (AL)

Crew we have now is excellent. Have had some problems in the past. Current analyst needs more COS and IOS training.
121 Analysts are new, lack some experience.

Q27: Other comments & suggestions

### Comments

** Question # 15e

204 What do they do? Not aware what happens.

310 Ran into bugs bringing up UNICOS. Mendota person said "no problems" - local analyst had to use non-official channels to get help. "Cray software support is extremely bureaucratic."

Furthermore, he wants access to all reported software problems (those reported by other sites) only the Cray analyst has access. A poor policy, in his opinion.

309 Very satisfied with "D.O.E. Group" at Cray, although they don't provide a great deal of support.

114 STATION: Disadvantage is that it's supported out of Germany.

118 Haven't seen anyone except Mendota Heights.

117 Don't know of any region support.

Things which we consider most important, CRI is not doing anything viable in (e.g. networking). CRI's current approach is non-standard in area where standards exist and it is wrong.

CRI is trying to sell us the networking environment they use in development themselves, but this won't satisfy Bell Labs. It is very limited - it is too specific. In the end CRI will have to redo it all.

CRI hyperchannel support is bringing the system down. In addition, design is wrong.

If CRI would adopt standard act working approach we would drop our approach in favor of it.

126 STATION: IBM station = 10, Vax = 9.

128 DOE systems group rating = 5.

Q27: Other comments & suggestions

### Comments

** Question # 16

107 16) Doing very, very well, except for C compiler. People very pleased with the machine.

204 Things are changing so fast, it's very hard. During the 1st 6 months = 0. Nothing worked, now it's better, it looks like its improving. Believe very much in Cray.

202 Reliability higher than expected. Less than expected: Introduction to new developments. Exploratory behavior of Cray (Cray picking up on the problems and taking the lead in finding a solution.)

103 Key reasons for a "5" rating:

- Too many downtime hits.
- Hardware solutions are slow in coming.
- Software releases (permanent fixes) are slow to arrive.
- Why didn't CRI realize about the electrostatic problem sooner, instead of two years after system was installed.

104 Formed image of what to expect in advance by working with CRI executives, etc.

105 Has exceeded my expectations re: hardware reliability.

Doesn't seem to be any correlation between amount of preventive maintenance and decrease in crashes. Most of our problems occur right after PM. Purpose of PM for CRI appears to be to train CE's.

111 Program justification for Cray installation was dropped by Washington. Expectations changed as a result.

207 No suprises.

114 Impressed with Cray hardware stability, software less so.

123 "9" for XMP.

118 Doing great as a COS system, as a UNIX system I am way behind where I want to be , UNIX hardware = 10, others = 2, average = 6.

115 System is "right on" in terms of reliability and performance.

Wind accuracy has improved 20% for ocean flights, this could have paid for Cray system itself.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

###	Comments
209	It's down all the time. It takes forever to fix. All my users want to leave.
212	Only because it's my expectation. If we were in full production, it would be a nightmare.
126	Very reliable system, software is there that we need (both Cray and third-party developed). Easy to part our proprietary software to the Cray. Overall Cray local, regional and HQ software support has been fairly good. Entire Cray organization is in metamorphasis. Software is still evolving, but it is good for where Cray is at in their maturity cycle. I recognize it is hard to staff as you expand.
131	I never expected it to be this good.
128	Rating = 7, not as reliable as should be, but they are high performing machines. Not totally satisfied with software and software support.
129	Rating is for C2 and 1S. XMP and 1A rating = 10.

Q27: Other comments & suggestions

### Comments

** Question # 17

107 17) Rating based on comparison with April '86.

102 The seriousness of the CRI software problems is seen when you realize that we have jobs that run 5-7 hours, but the system won't stay up but 3 hours. Situation has improved recently, but still has problems, the problems mentioned above are not CRI local people problems, they are Mendota Heights problems. An example of problems caused us by CRI = our DD49 disks (4-5 of them) had unrecoverable errors within 1-2 days, when we talked to CRI they said "oh yes, we've already fixed them." Why didn't CRI notify us in advance that this problem already solved.

- Mainframe is very reliable. Tape interface gets insufficient CRI emphasis.

- Software disk support ample. Disk hardware is new technology real sure.

- I don't want to give total negative impression. Hardware is good, local support is good. We are not totally up in arms regarding CRI.

103 Decline in satisfaction since last year due to slow response to software problems. CRI attitude is that they are more interested in selling new systems than keeping customers happy. This emphasis (pressure) is coming from CRI top management.

307 On-site personnel forgot to change "dump stuff (?)" when changing memory. They are not getting their money's worth on the upgrade, although it may have to do with system tuning. Block I/O is now "sky high" and Cray considers this their problem.

304 A major concern: I/O time, although this may be application software-dependent.

116 Cray VP immediatley responded to complaints we aired in last years survey - too bad it takes a survey to get Cray's attention on things like that. End result was good, however, we got our problem resolved.

313 They meet weekly with Pittsburgh district F.E. manager to discuss each outage & how handled and preventive measures.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

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### Comments
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129 Cray 2 = 3 (declined), 1S = 1 (improved XMP, 1A = 2 (unchanged)
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                    Cray Customer Satisfaction Survey
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                    Q27:  Other comments & suggestions


### Comments
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** Question # 17a
302 Software has become more stable, XMP/48 is a better CPU than the
    X/MP-22.
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                 Cray Customer Satisfaction Survey
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                 Q27:  Other comments & suggestions


 ### Comments
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** Question # 18
 109 Questions how ROI should be done, it's difficult.
 113 Contract negotiation for XMP/24 was very painful.  CRI HQ
     marketing people punished local CRI sales representative for
     taking so long when it wasn't his fault.  Transferring that
     person hurt us in the long run.

     My impression is that local CRI marketing representative was
     really trying to help us, while CRI HQ people were not trying to
     help us.
 131 Cray is a good investment, does better that what Cray will say in
     advance.
```

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 18a

204 Price performance and functionality has been lacking.

202 They've made estimates, and it's met expectations, but not really exceeded them.

201 No formal ROI, but he knows he's getting his money's worth.

111 Cray system is a "loss leader" for our center because of change in work load mix.

123 Have analyzed it only in scientific terms (i.e. problems computers helped to solve.)

119 Cray has been financially good for us but hard to put exact doller value on it. Had an example where Navy stopped paying us until we could resolve and fix some aircraft body cracks. Cray system gave us the enormous computing power we needed quickly to get it fixed and get the Navy paying us again.

116 Made some rough calculations, am satisfied. Would like same performance at lower cost.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 18b

103 - I overbought.

- Neither GD users nor GD corporate management are accepting of CRI (i.e. they are not happy with Cray situation).

- The technical users have accepted CRI system, but the "money providers" (management) have not.

- We are not getting enough billable time on the machine. XMP is too big for us, it's not sized right. Some blame for this goes to us, but salesperson commission incentive is also to blame.

- CRI's philosophy is "buyer beware - if you don't use it - that's tough."

- GD is in a strange environment. Government is buying many Crays for labs, then they give free time to GD employees. One customer of ours required GD employees to use the free government Cray. This situation makes GD management dissatisfied with the cost of my in-house Cray.

105 Too expensive for performance you can get out by a factor of four.

206 Hard to put $$ on the research we do.

123 Came in higher than I expected.

210 Too early to tell. Not loaded yet. Local sales people very helpful, but the people they call at corporate were lacking a bit.

212 Not, yet, maybe it will. Very expensive for the amount we are using.

124 Depends who you ask. (AL) Disagreement exists.
Billings haven't covered costs.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 19

104 CRI has a good system, is reliable. CRI not have resources like IBM, DEC does.

109 "Other" = UNISYS 1100/92, IBM = 2-3084, 1-3090 M400, DEC = 785, 8650

305 Ray does not like IBM, due mainly to inflexibility. DEC has a lack of trained hardware maintenance personnel. He is familiar with all 4 vendors listed.

They are thinking of going to an XMP-48 (with SSD), which Ray believes, will just about meet their workload.

207 Too early to tell! We've had the system only 6 weeks.

114 Honeywell rating = MULTICS

121 Cray equals or exceeds DEC & IBM vendors in terms of the four parameters.

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                        Q27:  Other comments & suggestions


 ### Comments
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** Question # 19a
 204 Qualify CDC's - 8 - it's older, more established, Cray.
 102 Cray, not counting availability = 9, counting availability = 7.
 208 Peripheral performance, IBM takes the cake.
```

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 19b

107 19b) Takes DEC a long time to repair, and they break frequently. Considering third-party maintenance.

102 Mainframe - 10, Peripherals = 7-8

104 Order of performance = IBM, CDC, Cray, DEC (DC)
Cray, DEC (HW)

114 IBM: large systems very stable.

209 How low can I go? Very bad. His problems may be unique to his machines model.

213 When system goes down, people are swarming all over it.

214 IBM is good at what they do, but they're getting a bit too big for their britches.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

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### Comments
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** Question # 19c

104 What we really want is a software release that is right and workable. DEC, IBM do better job in checking their code before releasing - this is what we want.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 19d

204 Has improved dramatically, had him 3 months, great.

202 Very happy with local sales representative, he's very informative, and doesn't steer us wrong, reliable. Significantly better than DEC, IBM.

104 IBM is in a class by themselves. CRI marketing support is good, our local representative is good, helpful to us, gets resources we need.

205 They're there when we call them.

114 CDC: They have high turnover in marketing which has hurt our account.

127 I see an IBM marketing person twice per week. Cray marketing person once every two months.

We have a saturated Cray system. Availability rating = 6, useability = 8.

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                    Cray Customer Satisfaction Survey
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                    Q27:  Other comments & suggestions


  ### Comments
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** Question # 20a
 107 20a) Everything but C is fine.
 204 Overall, not there when you need them.
 101 Accommodated tape support but h/w and s/w reliability is
     disappointing, had some problems with newer tapes, until
     recently.
 103 Some problems are not CRI's.
 104 CRI - DEC relationship has been good within this organization.
 106 "9" for supercomputer related needs, we could live with other
     supercomputer vendors.  Cray is nice, but not essential.  CRI is
     our first choice.
 110 Not responsive lately.
 303 Crays sell themselves! still order-taking rather than selling.
 310 In general, is extremely responsive, one problem is the lab's
     desire to change Cray networking configuration.  Process is a bit
     bureaucratic.
 113 CRI tries very hard, except for the FORTRAN people.  Cray's
     overall rating of "9" is in contrast to a "6" we'd give to IBM.
     We feel we can move CRI to our way of thinking many times, more
     so than IBM.
 114 Cray was very unresponsive until we started playing hardball, in
     early 1987, then they got responsive.  (Situation was with memory
     upgrade.)

     Rating was a "6" until about 3 months ago.
 122 Can be erratic, is very good on the local level.  If Cray
     corporate gets involved.  Sometimes problem areas arise, not sure
     if this is because we are competition to Cray or because it is
     their normal way of operating.
 119 We really have to sell UNICOS to our management.  We've told Cray
     of this need several times but they still have not responded to
     our request for help in doing this sales job.
 118 Don't know who at CRI is in charge of UNIX.  CRI has not taken an
     interest in our applications.  Don't know what is available, etc.
 115 Cray people always seem very interested in helping us.
 210 No visible evidence that Cray has gone out ot their way.  Local
     people are super.  HQ people highly marginal.
```

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                    Cray Customer Satisfaction Survey
                    ---- -------- ------------ ------

                    Q27:  Other comments & suggestions


### Comments
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211 A bit below average, definitely room for im
214 Cray as a company is very arogant.  They can afford to be because
    they are the only show in town.  They'll have to change when
    competition shows up.

    Howard Wolvington, Vienna VA, 703-821-6074

    Concerns about hardware reliability.  Goes down too often.
    Problems with COS, causes system interruptions.  Response quick,
    resolution poor.  MTBF unacceptably low.

    Corporate standard is 100 MTBF. (Jim)
128 Is improving.
```

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

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### Comments
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** Question # 20b
 103 Software = "2", hardware = "7" - average = "5"
 106 Disk leasing questions not promptly answered.
 109 Varies quite a bit from not good to outstanding.
 123 Cray was not very helpful nor creative concerning XMP financing.
 122 Hard to deal with Cray corporate in these areas.
 124 Contract Hassling.
 131 They do good.
```

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 20c

103 New guys try very hard.

105 Things start to slow down when local sales people have to go back to CRI HQ.

110 Sales support is non-existant and/or inconsistent. Can't get it when you want it. Very poor sales support.

Contact is not an issue for me, but it is for others at ARCO.

302 Previous local representative =9/10; now = 6/7.

207 No real local personnel, but helpful.

118 Just got a new local salesperson.

117 Salesperson lack of technical depth hurt us once (backdoor to the SSD). Got an unpleasant surprise. On the whole salespeople very helpful to us. They seem to be on the customer's side.

128 We have a new salesman, rating includes prior and existing salesman.

121 Recent change, this is Norm's rating.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

Comments

** Question # 20d

301 Sees the marketing representative once a week; speaks with him 2-3 times per week. Representative has been very responsive and has solved all problems but one (see question 25).
102 Don't know executives, see field executives once every 2 months, software executives once per month.
205 Not often enough.
208 Monthly meeting with district marketing person.
123 Now = twice/month for marketing representative frequency of interaction.
122 Cray executives only visit us whenever we request it.
117 With engineers, never see them. We see analysts every other day.
210 Are there exec. at Cray? Never seen one! Since delivery, zip.
211 Too often! (unless I need him)
124 As required.
131 When not procurring hardware = 2 times a week.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 20e
201 Good people work for Cray.

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                    Cray Customer Satisfaction Survey
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                    Q27:  Other comments & suggestions


 ### Comments
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** Question # 20f
 214 Corporate is very supportive.
```

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 21

203 In general, satisfied. A couple of minor suprises.

310 Aberdeen was Beta site for Berkeley's testing of BSD 4.2 and Gould's v. 1.3 of UNIX. They have had little feedback from Cray on UNICOS direction.

They will be joining/starting a global network of electronic mail for problem identification/resolution. "Cray is in for a suprise."

Would like UNIX manuals available on-line so they may be tailored locally and printed locally.

Comments:

COS: very reliable, mature O/S but lacks:
- ability for system administrator to manage file space
- networking (Cray "station" is not for network)

Glad to see UNICOS needs: - decent file migration - archiving software. ACSO: version 2.0 debuggers do not work that well: TCPIP is poor from coding standpoint (data structure changed - hard to port from BSD 4.2). Also: UNICOS is based on system II releases 1 & 2 - everyone else is at release 3 of system II.

On Cray-2; use of IBM CPU for file migration & archiving is poor choice. Not good to force purchase of IBM disks, tape.

122 Right now yes, six months ago I would have said no. It is interesting to note that recently we have begun to receive unsolicited approaches from Cray regional middle level managers.

Cray seems to be changing in the last 60 days to try to get their own peoples attitudes revised to be more customer interaction oriented. It would be interesting to learn if this is the result of a conscious Cray effort at HQ, and whether it is just happening locally.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

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### Comments
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313 Cray newsletter and "Blurbs" are good.
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Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

Comments

** Question # 21a

109 I'm reasonable in what I expect. CRI is remarkably frank in discussing directions with us.

114 Keep aware via CUG or newsletters.

116 CUG is helpful, as well as Cray, DEC's recent meeting. It is not as direct as a one-on-one meeting with Cray. Would like to have more frequent interaction personally to learn about Cray directions. Don't want too much interaction but want enough to stay aware of Cray's directions.

125 We have a standing invitation to visit CRI to discuss future at any time. We like this opportunity.

131 Cray sales representative keeps me very well informed, as a result, we are getting Cray 2.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

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### Comments
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** Question # 21b
 304 They feel they were not told the "whole truth" about the
     upgradeability of the Cray 1 (not upgradeable!).
```

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

###	Comments
** Question # 22a	
204	Only one method, and it’s OK, it’s one method and certainly not complete.
110	CUG is too technical, not enough common sense discussions that are management oriented.
206	Bad scheduling. Cray sent in 5 or 6 software engineers for roundtable discussion for optimization.
116	CUG is not as effective as would like for communicating with Cray management.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

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### Comments
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** Question # 22b
 308 No different from other user groups, company wants to make you
     feel as though you have input, they see other systems analysts
     and users to exchange information.
 313 Cray has taken action on various system problems and has kept CUG
     informed.
```

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 23

308 Don't see Margaret Loftus enough to get idea of Cray XMP and Cray-2 software interaction from a strategic standpoint.

307 Not well informed about what Cray does other than write FORTRAN and design & build hardware.

Lack of expertise in dealing with software subcontractors. Cray provides software from DEC & Wollongong. Attitude is "we're Cray; but we only provide other software." (We don't know anything about it or support it.)

She/they asked for one vendor to support all on-site hardware, (1 Cray & 3 Vaxes). Cray people, over the past few years, have learned a good bit about Vaxes. Now people are trained to handle everything, including Wollongong software.

122 Want to see a continuation of more openness concerning Cray future directions.

131 People supporting us from Cray are excellent. Cray has made an extra attempt to hire well. Has done one of best jobs in the world.

128 Like idea of customer survey, suggest that the questionnaire be sent in advance so that quantitative answers can be researched.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 24
106 Measure, but don't report it.
308 Depends on user - if using non-Cray hardware, then "wow" - if using Cray X/MP previously, then improvement is just "50-50."

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

Comments

** Question # 24a
203 Have a steering committee of users.
301 Generally, his users are experienced Cray users.
103 Measure COS availability, target - 99%. Actual results - 92-93%
111 Examples are how much Cray is available during periods of processing.

PM hours are low compared to Cray's normal estimates as CRI CE's creatively do PM on unclassified system items during classified processing periods.
207 Not at this time, probably in the future.
123 We measure turnaround stats for our own internal usage primarily.
116 It is very good.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 24b

107 24b) Satisfaction varies. Some users want Cray UNIX to be like Berkeley UNIX. Graphics people estatic about graphics.

204 Tough to compare. Users have unreasonable expectations.

203 Users always have expectations that can't be done.

103 Users like Cray speed, they think it's cheap.

106 Some dissentors exist (e.g. disk access difficulties.)

201 Not Cray's fault. The Cray's memory bound, need a bigger machine.

105 Performance, job thrashing is a problem. Hardware fix exists, but typical of CRI - they want us to buy SSD instead of adding COS functionality. CRI solution typically is buy faster hardware, but we are not the Department of Energy.

109 Varies from 5 to 10, depending on how heavily loaded the system is, workability of software. We have monthy reports.

110 "10" is an impossible number when various groups compete for a resource.

303 Took an internal survey in January 1987, using a "1-5" scale. Result was 3.6; X2 for a "1-10" scale in this case.

Every change in Cray O.S. conversions costs $1-$2 million.

111 "7" rating not related to CRI but is related to local schedules, nonconformity of our site vs. other Cray systems sites that they (the users) accustomed to.

207 Excited, but will they be excited with UNICOS.

Not enough experience yet, definetely not dissatisfied. Waiting on the O.S.

Other:

50/50 classified/non-classified. Utilization will grow over time.

114 Before memory was upgraded, satisfaction was a "4 to 5."

123 "8" for the XMP, "6" for the 1A.

120 Users like the Cray but don't like network obstacles to getting access to it.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

119 Somewhat impacted by system availability. If user can't get on the machine he hates it, because he or she can't run jobs elsewhere - they have to wait.

116 Our problems often relate to networking (code is not very fast). One of the driving forces to evaluate UNICOS is it's networking facilities.

117 Users complaints would reflect our comments.

Met Margaret Loftus and Les Davis.

Users mostly happy when get programs finished, but they are not happy with what it takes in between to get finished.

209 When users aren't happy, I'm not happy.

210 GE is in need of quality station code for Honeywell to Cray. Honeywell is doing alot for us. Cray shows no visible signs of helping, we're on our own.

Station code is very important to our Cray.

Keep it running like the VAX station, then all 10's.

212 We need more equipment to put on machine, always fighting for resources.

213 Low because the system is currently overloaded.

Main requirement - high performance with moderate memory with big CPU power. Could use 20x faster machine, and 10x memory. Cost effective computing.

124 Our fiddling with schedule causes our users same concern, they'd give us a "5".

125 Users concerned with turnaround time. Users would rate Cray system insert a "9", but might rate the operation a "7", we don't have all the capacity they would like.

128 Robustness of FORTRAN is a negative.

121 Rating influenced the load on the system. Rating could improve if we can get 20-30 users on interactively with UNICOS without impacting background processing.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

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### Comments
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129 Cray 2 users = 6, users of other Cray systems = 9.
```

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 25

202 Be able to share more openly with the overall goals of Cray's performance. Realize it's proprietary, but would like to kick around ideas: More open discussion with various competing methods for supercomputers. Clearer statement of philosophy of what goes int the design of the computer. That would help the s/w people.

301 He is awaiting resolution of a software problem with a tape drive.

103 - Need more application software that's not so expensive. It costs an arm and a leg for CRI hardware, and it costs the rest of the body for CRI software.

- CRI should go to St. Louis more often and talk to our VP - DSD in order to help me with Cray acceptance. Cray is now a "four letter word" in St. Louis. IBM and CDC are constantly up there. I'm left alone regarding selling CRI to St. Louis.

- Cray is not a marketing organization. It seems Cray marketing guys come from DEC, when they should come from IBM.

- I'm being wooed by AMDAHL. CRI needs some good supercomputer vendor to give them some competition.

- CRI should take a hard look at how they operate the business now and in the future. CRI is not a classy organization - would throw them out if the product were not so good. The sales people make presentations by copying pages out of a book, this is a good approach with us. CRI has nice magazines and brochures, but they don't equip their customer interface people well. IBM would never do what CRI does. - I don't know what happens to this customer satisfaction survey data. Only feedback I get is the CRI salesperson saying I didn't rate him so good. I don't know what CRI is doing with survey data. I don't see any action items it generates. (Jim couldn't remember seeing CRI 3-5-87 letter that mentioned some actions.)

- Jim would like to see survey results go to Seymore. Jim feels it gets filtered. Hasn't seen any big reactions to survey.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

###	Comments
104	We would like to see more reliable software, also a more systematic approach to customer communication, more regional training, operator training, we would like to be more aware of CRJ resources available - e.g. capacity planning (DC). Overall, CRJ is very responsive.
201	Get out of peripheral business, stick with computer.
105	Maintenance assigned time should be more flexible, also maintenance is too expensive. CRI has weekly maintenance in order to keep CE's from quitting from boredom. Why not have multiple CE's (from other customer's) do maintenance, it would help them get better trained. Strongly recommend CRI, they do better training. Our CE turnover is very high. There should be more get togethers of CE within CRI to improve training. We have repeatedly found problems here that have already been solved (unknown to us) at other sites. Example: CE accidently wiped out disk catalog.
105	Never see follow-up report on what SPRS are finally fixed or not. Would like to see this.
105	CRI should encourage other vendors to provide graphics. Graphics are great users of cycles. Graphics are a key to the future for most CRI customers. CRI needs to get graphics, I10 band width as an integral part of hardware design. Why doesn't CRI get someone else's graphics peripherals and remarket them. There is a need for tighter person to machine interface in graphics. There is a need to see how the answer is derived, get the researcher (i.e. CRI user) more involved.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

109 Like to see Cray define what capacity of their machines are - i.e. help us measure and track it.

109 Don't let legal and contracts people become too powerful, take a few risks in this area rather than overprotect. CRI has a bad tendency to pass a new rule if they perceived they are taken advantage of. This results in a cumbersome maze.

Don't let the ex-IBM'ers introduce too much arrogance into the company.

110 I'm concerned about CRI parts availability, warehousing and their answers (especially re: disks). Vendors tend to blame clients when they (vendors) don't have parts available.

308 Make UNICOS more uniform between - X/MP and -2. (This is admittedly the single biggest criticism and was offered by Bill Kramer, seconded promptly by Ron Bailey & Ron Deiss.) Wants software to be at same level for users.

Cray-2 gets new features/functions before X/MP on CFT-77 us. CFT-2 compilers, although rumored to drop CFT-2 compiler.

Difficulties in multi-tasking, microtasking support & reliablility improved.

Comments by David Bailey (software manager, brought in just to offer suggestions):

- "No existence of microtasking on Cray-2."
- Upgrade of CFT-2 to full CFT-77-when?
- No Character variables in FORTRAN
- Stack size is undersized leading to: I/O buffer requirement problem; which leads to aborted process (not corrected in UNICOS 2.0)

Compiler - vectorization of more than one loop (something about automatically decoding unrolling of 500 outer loops and 3 inner loops to execute.

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                     Cray Customer Satisfaction Survey
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                     Q27:  Other comments & suggestions


### Comments
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304 . Improved training of CE's on disk drive repair
    . Performance Measurement tools
        - system, not processor, capacity
        - performance monitoring
        - performance vs. capacity measurement
    . Concerned with support for current COS system.  needs
    commitment for long-term support of COS. Ex: tape drive over
    commitment software will be released in UNIX, not COS.
    . Easier-to-use debugging displays for software analysts.  With
    the system still running, can the analyst get better
    information on problem resolution.
    . Support cartridge tape drives.
302 "Could easily use 2 more X/MP-48's."
120 We are close to the end of when cycles alone sell the machine.
    The future will go to vendors offering full function software.
    If I were a marketing strategists for a Cray competitor I would
    concentrate on offering superior software.
118 It's not clear what is wrong with UNIX progress.  CRI UNIX effort
    mostly people new to UNIX or else old batch oriented people, CRI
    needs more UNIX experience.  My impressions that CRI committed to
    UNIX without fully appreciating the ramifications.

    Maintenance price is very high, does it bug us what it cost?

    Would be nice to have regional area hardware support and get a
    maintenance price reduction.

    Have CRI take more of a "solution to a total computing
    environment" approach.  They tend to give us the machine and
    leave things up to us.  We would like to see more leadership by
    CRI in terms of what we should do.

    CRI's attitude is that their interest stops at the end of the
    Cray.  I'd like to see a more "total systems approach" attitude
    by CRI.

    Cray has no incremental processing upgrade path within a given
    machine.  At some point it is easier to add incremental
    capability with alliant.
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                    Cray Customer Satisfaction Survey
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                    Q27:  Other comments & suggestions


### Comments
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213 Like to see more standardization of STATION software.
112 We are well satisfied with Cray.  However, Cray system I/O
    traffic is secondary to speed of hardware, this presents a
    problem to our job mix. (CH)

    Cray built a race car, but did not add air conditioning nor soft
    seats. (DR)
121 I like the way Cray is pushing UNICOS, I want to see that
    continue.

    Listen to the documentation survey feedback given by us recently
    to Cray.  We don't like spiral bindings.  Seems like a small
    thing, but this item has alot of attention.

    Would like customer access to the SPR database.

    Would like more advanced notice concerning movement of AIC's.


121 Cray has been extremely responsive and supportive.

    Cray should price equipment lower.
129 We see evidence that more harm than good is done with preventive
    maintenance.
129 CFT should compile faster and produce better code. (LB)

    In general satisfaction with CFT is very high.  Cray is very good
    at being there when problems occur, and putting enough people on
    it. (EF)

    Cray machines cost too much.  (LB)

    Want unified language efforts - One FORTRAN effort, not three,
    one C effort not four.  One oper. system (UNICOS) effort not two.
    (LB)
130 Cray getting bigger and we now are seeing the bad things that go
    with the bignesses, e.g.  Rigidity with software licensing,
    corporate paranoia.  This makes it more difficult to deal with
    them on a I'll-do-this-you-do-that basis. (SM)

    Spend more time on reliability.  This is getting to be a really
    important problem.  (DP)

    Need clean interfaces to bring FORTRAN to other environments
    smoothly. (DF)
```

Cray doesn't pay enough attention to modern software development techniques. (SM)

Cray should get off EIC's back about LLC, desire to minimize PM. We are paying maintenance bill and we are happy, so Cray shouldn't be so rigid. (PD)

Computers develop personalities. A stable engineering crew is highly valuable. Let CE's live with machine over long term. Pay CE's better. (PD)

Don't put us down in public because we do things differently. (PD)

How recover maintenance costs when only one processor is down on a multi-processor. Maintenance contracts need to recognize multi-processors as a new beast. (PD)

Cray unwilling to face the fact we can't give them the HDA once classified data has been used. Cray needs to resolve this area with IBIS. (PD)

Overall, we have a good working relationship with Cray. (PD)

```
                         Cray Customer Satisfaction Survey
                         ---- -------- ------------ ------

                         Q27:  Other comments & suggestions


### Comments
--- --------
```

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 26

306 He leases, rather than purchases. Easier to add/drop products with a lease that a purchase.

Comments:

They are an unusual site since Cray is still supporting COS 1.13. They will upgrade to COS 1.16 when certain on-site problems have been resolved.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 26b

204 If I could buy 2+ computers, it would be a Cray. If only one, not sure. Other machines out there. We would/will buy Cray again. We are very much a friend of Cray. We are a very unique Cray site. We hope we can provide insight to Cray as well as Cray helping us. Seymour Cray is Cray. Quite an incredible person. A major reason why we do business with Cray. Cray should emphasize S/W side.

117 Would need to look carefully at price performance C2 only has tiny amount of memory. Memory availability is very important to us.

We know XMP didn't have enough memory, had hoped that other types of jobs would run OK on Cray (written in C) - but they don't run amazingly fast.

We'd like it to work well, but don't see how.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 27

107 27) I'm really impressed with UNICOS stability. We just don't crash. This is in contrast to my COS experience.

108 27) Bring down CRI prices. We have tough time justifying multi-million dollar systems to management. Would like to get feed back on survey results to see how we compare to other sites.

203 Already looking to the YMP. Cray overall is the best computer company he has encountered. Peripheral reliability has alot of room for improvement. Not sure how reliable it can be. Have leaned toward performance. We knew what we were getting into. Would like to see a summary of the survey.

301 Extra Information - customer base

- Petroleum
- Semiconductor Mfrg.
- Government
- Universities
- Software companies

101 I have impression the reliability we are experiencing on this Vintage Machine is about average for the industry. I've been told newer machines are better. To believe this I don't want to just hear the salespersons opinion. I want statistics that prove it. Overall, I want to send a strong message to CRI - pay attention to your installed customer base.

104 Did not see results of last years surveys, would like to know what changes were implemented as a result of survey.

106 In the past our profits were good, we were less concerned with economics. Our profitability has gone down recently - we seem to get less support from CRI than from others in terms of helping us examine things analytically/economically.

Cray has high maintenance costs - we are now concerned about this. Don't want to reduce level of service, but want to see innovative ways to reduce costs.

CRI should be complemented on COS 116.

Advice to CRI: 1) Keep on making it better. 2) Keep on reducing costs of care and feeding of system.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

###	Comments
105	We have product we try to sell to other CRI sites. Some CRI offices respond very well, some don't.
109	Cray 1S was very stable, we were very happy. Had COS 114 bug fix had a few problems. Now we have XMP installed, experiencing some COS instability. We don't expect this to continue, feel it will be better over time. (MH) CRI personnel are very responsive - they go overboard to help us stay with it until it is fixed. (MH) CRI training on JCL, CFT, COS was very good. (DH) We are happy with the system, all things considered. (MH, DH)
110	As long as Cray Keeps its lead in speed, they'll be OK. Scientific community views Cray as a cult.
111	Ron Todd was the sole respondent for questions 10, 2, 3a, 10b, c, d, 18, 19, 20c, d, e, 22, 24a, 24b. Duane Winkler answered questions on software (i.e., 12, 13, 14, 15).
111	We are very satisfied with CRI. They strike a good balance.
111	We appreciate the opportunity to participate in the survey. Would prefer to answer a mail survy as it would be less time consuming. (RT) CRI local people very pleasant to work with, they are concerned about fixing problems. I'm a very satisfied customer. (DW)
208	Highly in favor of them doing this survey, We'd like to see more CONCRETE results. Like to see qualifications of results. It gives credibility. Words are nice, but let's see quantification. DD49 problems - look at sealed HDAS.
114	CRI as a company has very high integrity - we trust them. (BH) Felt CRI had really done the improvements they claimed in the March 5 letter. (NS)

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

123 Cray marketing appears to want to mimic IBM in terms of customer interaction. This has changed in recent years. Currently Cray marketing is not as personalized and individually focused as it used to be. The message to Cray is to remember your old customers and stay in contact with them.

120 I am pleased with our head salesman and the support we get from Cray, such as the research. Cray's management support has been good.

119 We are concerned that Cray will be focusing on building the fastest (most expensive) machines. We need machines that sell in the $6-10 million range, we are not certain if Cray will be able to help us out in this regard in the future.

118 The "unique system" architecture of Cray is a big liability as it prevents incremental upgrading.

CRI's UNIX effort is clearly less effective than was done with COS.

115 Annual visit to Cray HQ pays great dividends to us. (Col. Fye)

Advances Cray making on hardware and software is right on track, it's what we are looking for.

116 Overall we are very happy with Cray. It's been a good relationship.

117 There were many UNIX features we really wanted which CRI wouldn't provide at any time. If something doesn't work from a CRI design, they respond to it.

CRI listens to us but often doesn't implement many items we really want because we are only one customer of many. We understand CRI's position but feel in the long run CRI decisions on UNICOS may be digging themselves a hole they can't get out of.

For example, restart procedures were rushed by CRI, but not designed right, so they will have to go back and redo. The structure of the systems data on disk is another example. (DR) Some work done was buggy.

Level of confidence in CRI UNICOS effort is low.

CRI is making a bad mistake in difusing efforts. XMP and C.2 UNIX people are not talking to each other enough, and they are not talking to Chippowa Falls enough. CRI has too many different UNIX efforts going on. They aren't doing enough of the same thing regarding functionality.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

###	Comments

211 Every time we want to regenerate this system, it takes an inordinate amount of time.

Procedures on other systems that run quickly run slow on Cray. (hours vs. minutes.)

"We (Cray) have a procudure, and by God, we'll run it hell or high water!"

Not sufficient on-line diagnostics. Disk goes bad (we have to take system down).

Cray = Good price/performance.

Cray needs to understand that it is difficult for a customer to stay up to date with software procedures.

SW:

"Go ahead & do it, as fast as you can, get it on line, sure, alot of hell with users for 2-3 days, but then It'll be OK" (Corporate Cray said that).

- NOT the way to do things!!!
- Not a good mentality

212 Maintenance expensive! Reliability issues.

125 Appreciated being involved with selection of engineer in charge.

I feel the satisfaction survey last year may have helped improve things here.

We are happy with CRI. CRI has corner on the market until competitors develop unique features.

Prefer the on-site interview to a telephone one as I can communicate more with an on-site survey.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

###	Comments
126	Cray didn't have the IBM MVS station facilities we needed to accommodate some of our remote users efficiently. Our local Cray office is responsive to us. They handle our problem resolution. Some of the problems Cray exhibits are inherent in their expansion challenges. Cray's growth does concern us, especially as it impacts support of their hardware and software. (e.g. watering down of talent) To sum it up, we have been very pleased.
214	Better disk drives! No on-line diagnostic for disks, 4th generation computer, 2nd generation diagnostics. Summed up, reliability hardware and software. Lack of sophistication to correct problems, when they arise.
131	I wished Cray had told me to buy stock 2 years ago. Cray is one of the foremost companies in the world. Cray has uncanny ability to foresee the future.
130	In general we've been reasonably satisfied with Cray. (BB)

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # 27a
205 User groups are 'interesting', don't give them too much credit. Sometimes effect, not alot.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # ADD

313 Moving more to VAX front ends from CDC, Prime.

Has 5000 Westinghouse internal users.

Data shown if for unscheduled outages.

3 software analysts & 5 hardware analysts on-site.

311 Has a board which awards/subtracts & to ZERO-ONE systems based on performance.

Cray Customer Satisfaction Survey

Q27: Other comments & suggestions

### Comments

** Question # INTR

308 . Interactive Operation
. Nationwide Users
. Majority of responses by Ron Bailey; Bill Kramer provided specific suggestions.

307 . 1000 users, nationwide
. Air/water/solid state research for navy
. Purchased X/MP-24 in March 1987

305 Used for: 1) air frame simulation; 2) fluid dynamics; 3) electrical circuitry simulation; 4) chemicals/polymers simulation

309 . Sandia Labs is part of U.S. Department of Energy.

. Purchased CTSS O.S. to get interactive, time-sharing operation.

. Looking at/considering purchase of Cray X/MP.

313 Jim Kasdorf passed me to Lynn Laymon (male) who, inturn, passed me to Fran Pellegrino (male).

Fran was an original member/founder of CUG, & recently surveyed 91 Cray user sites.

Fran responded to survey in 1986.

311 Site managed by ZERO-ONE SYSTEMS, INC.

Seeks stable, off-the-shelf high performance computers. Differs from NAS division at Ames, which is mandated to find "pathfinding" and "prototyping" equipment.

APPENDIX

FIELD CODES

CONFIDENTIAL

INPUT QUESTIONNAIRE

CATNO CATALOG. NO. Z C R 3
SIC. CODE
SIZE CODE
AREA CODE
STUDY CODE
DATE DATES
MM DD YY

STUDY TITLE: CRAY 1987 CUSTOMER Type SATISFACTION SURVEY

TYPE OF INTERVIEW: ☐ VENDOR ☒ USER ☐ TELEPHONE ☐ ON-SITE ☐ MAIL

INTERVIEWER: __________

COMPANY: Co

ADDRESS: Add1
Add2
Add3

Region: __________

Type System: __________

Type OS: __________

% Utilization: __________

Type Operations: __________ (1=Comm. 2=Govt.)

INDUSTRY ☐

- ☐ Discrete Manufacturing
- ☐ Process Manufacturing
- ☐ Transportation
- ☐ Utilities
- ☐ Telecommunications
- ☐ Distribution
- ☐ Banking & Finance
- ☐ Insurance
- ☐ Medical
- ☐ Education
- ☐ Services
- ☐ Federal Government
- ☐ State & Local Government
- ☐ Other Industry Specific

INTERVIEWS

NAME	TITLE	TELEPHONE NO.
Name		Ph

SUMMARY __________

Summary

REFERENCES __________

ZCR3

F1
March 1987

CRAY CUSTOMER SATISFACTION SURVEY

INTRODUCTION

Cray Research has commissioned INPUT to conduct a national customer satisfaction survey of Cray computer users. The purpose of the survey is to help Cray identify opportunities to best serve you and others in the future.

INPUT is an independent international market research and consulting firm that specializes in the computer industry.

Cray has specifically asked us to interview you. Your opinions and suggestions are very important to Cray. We would like to get your candid responses at this time. If you wish any of your answers to be treated anonymously, please let us know.

SYSTEM PROFILE

1. To begin with we would like a quick profile of your current Cray computer system(s).

	System #1	System #2	System #3
A. Model Type	Q1A		
B. Acceptance Date (mo/yr)	Q1B	Q1other	
C. Operating System/ Release Level	Q1C		
D. Type of Processing For Majority of Work *(circle answer)*	Q1D Production Research	Production Research	Production Research

Definition: *"Production" processing directly serves the organization's primary operational mission and is characterized most often by repetitive tasks that are frequently time critical. In contrast, "Research" processing usually involves projects dealing with investigations of scientific-related phenomena, and is typically less time critical than production tasks.*

DECISION CRITERIA

2. If your organization were to purchase a supercomputer today, how important would each of these factors be in the purchase decision process (scale of *1 to 10,* with *1 = very low* and *10 = very high* importance).

	Rating (1 to 10)
A. Overall System Performance	Q2A
B. Hardware Reliability	Q2B
C. System Software	
— Usability	Q2C1
— Maintenance/Support	Q2C2
— Training	Q2C3
— Documentation	Q2C4

10

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#1
March 1987

CRAY CUSTOMER SATISFACTION SURVEY/Cont.

DECISION CRITERIA/CONT.

	Rating (1 to 10)
D. Functionality of Operating System Software	Q2D
E. Availability of Applications Software	Q2E
F. Ease of Conversion	Q2F
G. Overall System Price	Q2G

3. A. What other decision criteria would you consider important?

Q3

B. Please rank their importance on a scale of 1 to 10 (*1 = very low* and *10 = very high).*

PERFORMANCE

4. What percent utilization (on average over the past 6 months) are you currently experiencing with the entire system? Q4 %

5. How many hardware or software-caused system interruptions per system do you have monthly (on average over the past 6 months)? Q5 (number)

A. What percent are hardware related? Q5A %

B. What percent are software related? Q5B %

C. What percent are "other" (environment, etc.)? Q5C %

TOTAL = 100 %

10

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#1
March 1987

CRAY CUSTOMER SATISFACTION SURVEY/Cont.

HARDWARE

The following questions relate specifically to Cray hardware and associated services.

6. On the average how long does it take Cray to *respond* once you have placed a maintenance request?

   A. During regular maintenance availability time? Q6A (minutes)

   B. During off-hours? Q6B (minutes)

7. On the average how long does it take your Cray customer engineer to repair hardware problems once work has begun? Q7 (minutes)

8. On a scale of 1 to 10, how satisfied are you with Cray's: *(1 = very low* and *10 = very high* satisfaction)

	Rating (1 to 10)
A. Mainframe reliability?	Q8A
B. Peripheral reliability (e.g., disks, tapes, I/O subsystem)?	Q8B
C. Hardware maintenance *response* time?	Q8C
D. Hardware maintenance *repair* time?	Q8D

9. On a scale of 1 to 10, in your opinion what is the level of quality of the diagnostic procedures currently being used by Cray? Q9

10. Please rate on a scale of 1 to 10 your current level of satisfaction for the following hardware support services:

	Rating (1 to 10)
A. Hardware installation consulting?	Q10A
B. Hardware documentation?	Q10B
C. Parts availability?	Q10C
D. Cray's escalation procedures?	Q10D
E. Cray *on-site* customer engineer skill level?	Q10E
F. Cray *field* hardware technical support personnel skill level (i.e., region or headquarters-based people)	Q10F

14

INPUT

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#1
March 1987

CRAY CUSTOMER SATISFACTION SURVEY/Cont.

SOFTWARE

The following questions relate only to Cray software and associated services.

11. For which of the following types of systems software are you currently receiving support? *(check all that apply)*

Q11

☐ COS ☐ UNICOS ☐ STATION ☐ PASCAL

☐ CTSS ☐ FORTRAN ☐ C ☐ ____________

12. On average, how long does it take Cray to *respond* to a systems software problem?

	Operating System	FORTRAN	C	STATION
A. CRITICAL	Q12A1	Q12A2	Q12A3	Q12A4
B. NON-CRITICAL	Q12B1	Q12B2	Q12B3	Q12B4
	(days)	**(days)**	**(days)**	**(days)**

13. On average, how long does it take Cray to *resolve* a systems software problem?

	Operating System	FORTRAN	C	STATION
A. CRITICAL	Q13A1	Q13A2	Q13A3	Q13A4
B. NON-CRITICAL	Q13B1	Q13B2	Q13B3	Q13B4
	(days)	**(days)**	**(days)**	**(days)**

14. On a scale of 1 to 10, how satisfied are you with:
(1 = very low and *10 = very high* satisfaction)

	Operating System	FORTRAN	C	STATION
A. Systems software reliability?	Q14A1	Q14A2	Q14A3	Q14A4
B. Systems software maintenance *response* time?	Q14B1	Q14B2	Q14B3	Q14B4
C. Systems software maintenance *repair* time?	Q14C1	Q14C2	Q14C3	Q14C4

INPUT

ZCR3

#1
March 1987

CRAY CUSTOMER SATISFACTION SURVEY/Cont.

SOFTWARE/CONT.

15. Please rate on a scale of 1 to 10 your current level of satisfaction for the following systems software support services:

	Operating System	FORTRAN	C	STATION
A. Systems software training?	Q15A1	Q15A2	Q15A3	Q15A4
B. System software documentation?	Q15B1			
C. System software escalation procedures?	Q15C1			
D. Cray's *on-site* software analyst?	Q15D1			
E. Cray's *field* software technical support (region or headquarter-based)?	Q15E1			

GENERAL

16. On a scale of 1 to 10, how well is your Cray system currently living up to your expectations? *(1 = very low* and *10 = very high)* Q16

17. Has your overall satisfaction with Cray improved, remained unchanged, or decline since the last customer satisfaction survey?

1=IMPROVED 2=UNCHANGED 3=DECLINED 99=NO RESPONSE

Q17

Why? Q17B

18. A. Have you evaluated the return on investment (ROI) of your Cray system?
Q18A (1 = Yes, 2 = No)

B. Has it met with your expectations? ______ (1 = Yes, 2 = No)
Q18B

25

INPUT

ZCR3

#1
March 1987

CRAY CUSTOMER SATISFACTION SURVEY/Cont.

GENERAL/CONT.

19. Please rate the following companies on their performance in the indicated areas. *(1 = very poor and 10 = excellent)*

	IBM	CDC	DEC	CRAY	OTHER (specify)
A. System Performance	Q19A1	Q19A2	Q19A3	Q19A4	Q19A5
B. Hardware maintenance	Q19B1				
C. Software Maintenance	Q19C1				
D. Marketing Support	Q19D1				

20. The following questions relate to how well you like doing business with Cray. (Please respond on a scale of *1 to 10* with *1 = unsatisfied* and *10 = extremely satisfied*)

	Rating (1 to 10)
A. Extent Cray is responsive to your organization's overall needs?	Q20A
B. Cray's responses to your financial questions?	Q20B
C. Helpfulness of Cray local marketing personnel?	Q20C

D. Which Cray personnel do you regularly interact with? How frequently? *(Complete all that apply)*

	Personnel	**Frequency: once per ....**
______	Engineers, Analysts	Q20D1 Months
______	Marketing Representative	Q20D2 Months
______	Cray executives	Q20D3 Months

26

INPUT

CRAY CUSTOMER SATISFACTION SURVEY/Cont.

GENERAL/CONT.

E. With regard to your Cray marketing representative, do you feel you get enough support and have sufficient contact? Q20E (1 = Yes, 2 = No)

Why or why not?

Q20E2

F. Do you feel you have enough contact and interaction with Cray corporate management? Q20F (1 = Yes, 2 = No)

Why or why not?

Q20F2

21. A. Are you and your organization kept as aware as you would like to be of Cray's direction in both hardware and software? Q21A (1 = Yes, 2 = No)

B. If not, what would you like?

Q21B

22. A. Do you feel the Cray User's Group provides an effective channel to communicate with Cray management? Q22A (1 = Yes, 2 = No)

B. Do you use this channel? Q22B (1 = Yes, 2 = No)

Why or why not?

Q22B2

9

INPUT

ZCR3

CRAY CUSTOMER SATISFACTION SURVEY/CONT.

GENERAL/CONT.

23. What suggestions do you have concerning how interaction could be improved between Cray and its customers?

Q23

24. A. Do you measure the level of service being provided to users of your Cray system?

Q24A (1 = Yes, 2 = No)

B. On a scale of 1 to 10, how do your users rate their satisfaction with the system? *(1 = very low* and *10 = very high*)

Q24B (1 ~~= Yes, 2 = No)~~

25. In addition to what has been discussed above, is there anything Cray could do to further improve your satisfaction?

Q25

26. A. All things considered, if tomorrow morning you were to suddenly receive funding approval for acquiring additional supercomputer capability, would you buy from Cray?

Q26A (1 = Yes, 2 = No, 3 = Maybe, 4 = Other)

B. Why or why not?

Q26B

6

ZCR3

#1
March 1987

CRAY CUSTOMER SATISFACTION SURVEY/CONT.

27. What other general suggestions or comments do you have that have not been addressed above?

Q27

1

CRAY CUSTOMER SATISFACTION SURVEY/CONT.

27. What other general suggestions or comments do you have that have not been addressed above? (CONTINUED)

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TRANS
[Q12B1]=MISSING
[Q12B1]<1

TRANS
[Q12B1]=MISSING
[Q12B1]>900

TRANS
[Q12B2]=MISSING
[Q12B2]<1

TRANS
[Q12B2]=MISSING
[Q12B2]>900

TRANS
[Q12B3]=MISSING
[Q12B3]<1

TRANS
[Q12B3]=MISSING
[Q12B3]>900

TRANS
[Q12B4]=MISSING
[Q12B4]<1

TRANS
[Q12B4]=MISSING
[Q12B4]>900

TRANS
[Q13A1]=MISSING
[Q13A1]<1

TRANS
[Q13A1]=MISSING
[Q13A1]>900

TRANS
[Q13A2]=MISSING
[Q13A2]<1

TRANS
[Q13A2]=MISSING
[Q13A2]>900

TRANS
[Q13A3]=MISSING
```

```
[Q13A3]<1

TRANS
[Q13A3]=MISSING
[Q13A3]>900

TRANS
[Q13A4]=MISSING
[Q13A4]<1

TRANS
[Q13A4]=MISSING
[Q13A4]>900

TRANS
[Q13B1]=MISSING
[Q13B1]<1

TRANS
[Q13B1]=MISSING
[Q13B1]>900

TRANS
[Q13B2]=MISSING
[Q13B2]<1

TRANS
[Q13B2]=MISSING
[Q13B2]>900

TRANS
[Q13B3]=MISSING
[Q13B3]<1

TRANS
[Q13B3]=MISSING
[Q13B3]>900

TRANS
[Q13B4]=MISSING
[Q13B4]<1

TRANS
[Q13B4]=MISSING
[Q13B4]>900

TRANS
[Q14A1]=MISSING
[Q14A1]<1

TRANS
[Q14A1]=MISSING
[Q14A1]>10
```

```
TRANS
[Q14A2]=MISSING
[Q14A2]<1

TRANS
[Q14A2]=MISSING
[Q14A2]>10

TRANS
[Q14A3]=MISSING
[Q14A3]<1

TRANS
[Q14A3]=MISSING
[Q14A3]>10

TRANS
[Q14A4]=MISSING
[Q14A4]<1

TRANS
[Q14A4]=MISSING
[Q14A4]>10

TRANS
[Q14B1]=MISSING
[Q14B1]<1

TRANS
[Q14B1]=MISSING
[Q14B1]>10

TRANS
[Q14B2]=MISSING
[Q14B2]<1

TRANS
[Q14B2]=MISSING
[Q14B2]>10

TRANS
[Q14B3]=MISSING
[Q14B3]<1

TRANS
[Q14B3]=MISSING
[Q14B3]>10

TRANS
[Q14B4]=MISSING
[Q14B4]<1

TRANS
[Q14B4]=MISSING
```

```
[Q14B4]>10

TRANS
[Q14C1]=MISSING
[Q14C1]<1

TRANS
[Q14C1]=MISSING
[Q14C1]>10

TRANS
[Q14C2]=MISSING
[Q14C2]<1

TRANS
[Q14C2]=MISSING
[Q14C2]>10

TRANS
[Q14C3]=MISSING
[Q14C3]<1

TRANS
[Q14C3]=MISSING
[Q14C3]>10

TRANS
[Q14C4]=MISSING
[Q14C4]<1

TRANS
[Q14C4]=MISSING
[Q14C4]>10

TRANS
[Q15A1]=MISSING
[Q15A1]<1

TRANS
[Q15A1]=MISSING
[Q15A1]>10

TRANS
[Q15A2]=MISSING
[Q15A2]<1

TRANS
[Q15A2]=MISSING
[Q15A2]>10

TRANS
[Q15A3]=MISSING
[Q15A3]<1
```

```
TRANS
[Q15A3]=MISSING
[Q15A3]>10

TRANS
[Q15A4]=MISSING
[Q15A4]<1

TRANS
[Q15A4]=MISSING
[Q15A4]>10

TRANS
[Q15B1]=MISSING
[Q15B1]<1

TRANS
[Q15B1]=MISSING
[Q15B1]>10

TRANS
[Q15B2]=MISSING
[Q15B2]<1

TRANS
[Q15B2]=MISSING
[Q15B2]>10

TRANS
[Q15B3]=MISSING
[Q15B3]<1

TRANS
[Q15B3]=MISSING
[Q15B3]>10

TRANS
[Q15B4]=MISSING
[Q15B4]<1

TRANS
[Q15B4]=MISSING
[Q15B4]>10

TRANS
[Q15C1]=MISSING
[Q15C1]<1

TRANS
[Q15C1]=MISSING
[Q15C1]>10

TRANS
[Q15C2]=MISSING
```

```
[Q15C2]<1

TRANS
[Q15C2]=MISSING
[Q15C2]>10

TRANS
[Q15C3]=MISSING
[Q15C3]<1

TRANS
[Q15C3]=MISSING
[Q15C3]>10

TRANS
[Q15C4]=MISSING
[Q15C4]<1

TRANS
[Q15C4]=MISSING
[Q15C4]>10

TRANS
[Q15D1]=MISSING
[Q15D1]<1

TRANS
[Q15D1]=MISSING
[Q15D1]>10

TRANS
[Q15D2]=MISSING
[Q15D2]<1

TRANS
[Q15D2]=MISSING
[Q15D2]>10

TRANS
[Q15D3]=MISSING
[Q15D3]<1

TRANS
[Q15D3]=MISSING
[Q15D3]>10

TRANS
[Q15D4]=MISSING
[Q15D4]<1

TRANS
[Q15D4]=MISSING
[Q15D4]>10
```

```
TRANS
[Q15E1]=MISSING
[Q15E1]<1

TRANS
[Q15E1]=MISSING
[Q15E1]>10

TRANS
[Q15E2]=MISSING
[Q15E2]<1

TRANS
[Q15E2]=MISSING
[Q15E2]>10

TRANS
[Q15E3]=MISSING
[Q15E3]<1

TRANS
[Q15E3]=MISSING
[Q15E3]>10

TRANS
[Q15E4]=MISSING
[Q15E4]<1

TRANS
[Q15E4]=MISSING
[Q15E4]>10

TRANS
[Q16]=MISSING
[Q16]<1

TRANS
[Q16]=MISSING
[Q16]>10

TRANS
[Q17]=MISSING
[Q17]<1

TRANS
[Q17]=MISSING
[Q17]>90

TRANS
[Q18A]=MISSING
[Q18A]<1

TRANS
[Q18A]=MISSING
```

```
[Q18A]>2

TRANS
[Q18B]=MISSING
[Q18B]<1

TRANS
[Q18B]=MISSING
[Q18B]>2

TRANS
[Q20A]=MISSING
[Q20A]<1

TRANS
[Q20A]=MISSING
[Q20A]>10

TRANS
[Q20B]=MISSING
[Q20B]<1

TRANS
[Q20B]=MISSING
[Q20B]>10

TRANS
[Q20C]=MISSING
[Q20C]<1

TRANS
[Q20C]=MISSING
[Q20C]>10

TRANS
[Q20D1]=MISSING
[Q20D1]<=0

TRANS
[Q20D1]=MISSING
[Q20D1]>900

TRANS
[Q20D2]=MISSING
[Q20D2]<=0

TRANS
[Q20D2]=MISSING
[Q20D2]>900

TRANS
[Q20D3]=MISSING
[Q20D3]<=0
```

```
TRANS
[Q20D3]=MISSING
[Q20D3]>900

TRANS
[Q20E]=MISSING
[Q20E]<1

TRANS
[Q20E]=MISSING
[Q20E]>2

TRANS
[Q20F]=MISSING
[Q20F]<1

TRANS
[Q20F]=MISSING
[Q20F]>2

TRANS
[Q21A]=MISSING
[Q21A]<1

TRANS
[Q21A]=MISSING
[Q21A]>2

TRANS
[Q22A]=MISSING
[Q22A]<1

TRANS
[Q22A]=MISSING
[Q22A]>2

TRANS
[Q22B]=MISSING
[Q22B]<1

TRANS
[Q22B]=MISSING
[Q22B]>2

TRANS
[Q24A]=MISSING
[Q24A]<1

TRANS
[Q24A]=MISSING
[Q24A]>2

TRANS
[Q24B]=MISSING
```

```
[Q24B]<1

TRANS
[Q24B]=MISSING
[Q24B]>10

TRANS
[Q26A]=MISSING
[Q26A]<1

TRANS
[Q26A]=MISSING
[Q26A]>4
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